

## SEQUENCE LISTING

<110> The Government of the United States of America as  
represented by the Secretary of the Department of Health and  
Human Services  
Drayna, Dennis  
Kim, Un-kyung

<120> VARIANTS OF HUMAN TASTE RECEPTOR GENES

<130> 4239-66168-02

<150> US 60/480,035  
<151> 2003-06-19

<160> 264

<170> PatentIn version 3.2

<210> 1  
<211> 900  
<212> DNA  
<213> Homo sapiens

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<222> (1)..(900)

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<222> (332)..(332)  
<223> r is g or a

<220>  
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<223> y is t or c

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atg cta gag tct cac ctc att atc tat ttt ctt ctt gca gtg ata caa 48  
Met Leu Glu Ser His Leu Ile Ile Tyr Phe Leu Leu Ala Val Ile Gln  
1 5 10 15  
ttt ctt ctt ggg att ttc aca aat ggc atc att gtg gtg gtg aat ggc 96  
Phe Leu Leu Gly Ile Phe Thr Asn Gly Ile Ile Val Val Val Asn Gly  
20 25 30  
att gac ttg atc aag cac aga aaa atg gct ccg ctg gat ctc ctt ctt 144  
Ile Asp Leu Ile Lys His Arg Lys Met Ala Pro Leu Asp Leu Leu Leu  
35 40 45  
tct tgt ctg gca gtt tct aga att ttt ctg cag ttg ttc atc ttc tac 192  
Ser Cys Leu Ala Val Ser Arg Ile Phe Leu Gln Leu Phe Ile Phe Tyr  
50 55 60  
gtt aat gtg att gtt atc ttc ttc ata gaa ttc atc atg tgt tct gcg 240  
Val Asn Val Ile Val Ile Phe Phe Ile Glu Phe Ile Met Cys Ser Ala  
65 70 75 80  
aat tgt gca att ctc tta ttt ata aat gaa ttg gaa ctt tgg ctt gcc 288

Asn Cys Ala Ile Leu Leu Phe Ile Asn Glu Leu Glu Leu Trp Leu Ala  
 85 90 95  
 336  
 aca tgg ctc ggc gtt ttc tat tgt gcc aag gtt gcc agc gtc crt cac  
 Thr Trp Leu Gly Val Phe Tyr Cys Ala Lys Val Ala Ser Val Xaa His  
 100 105 110  
 384  
 cca ctc ttc atc tgg ttg aag atg agg ata tcc aag ctg gtc cca tgg  
 Pro Leu Phe Ile Trp Leu Lys Met Arg Ile Ser Lys Leu Val Pro Trp  
 115 120 125  
 432  
 atg atc ctg ggg tct ctg cta tat gta tct atg att tgt gtt ttc cat  
 Met Ile Leu Gly Ser Leu Leu Tyr Val Ser Met Ile Cys Val Phe His  
 130 135 140  
 480  
 agc aaa tat gca ggg ttt atg gtc cca tac ttc cta agg aaa ttt ttc  
 Ser Lys Tyr Ala Gly Phe Met Val Pro Tyr Phe Leu Arg Lys Phe Phe  
 145 150 155 160  
 528  
 tcc caa aat gcc aca att caa aaa gaa gat aca ctg gct ata cag att  
 Ser Gln Asn Ala Thr Ile Gln Lys Glu Asp Thr Leu Ala Ile Gln Ile  
 165 170 175  
 576  
 ttc tct ttt gtt gct gag ttc tca gtg cca ttg ctt atc ttc ctt ttt  
 Phe Ser Phe Val Ala Glu Phe Ser Val Pro Leu Leu Ile Phe Leu Phe  
 180 185 190  
 624  
 gct gtt ttg ctc ttg att ttc tct ctg ggg agg cac acc cgg caa atg  
 Ala Val Leu Leu Leu Ile Phe Ser Leu Gly Arg His Thr Arg Gln Met  
 195 200 205  
 672  
 aga aac aca gtg gcc ggc agc agg gtt cct ggc agg ggt gca ccc atc  
 Arg Asn Thr Val Ala Gly Ser Arg Val Pro Gly Arg Gly Ala Pro Ile  
 210 215 220  
 720  
 agc gcg ttg ctg tct atc ctg tcc ttc ctg atc ctc tac ttc tcc cac  
 Ser Ala Leu Leu Ser Ile Leu Ser Phe Leu Ile Leu Tyr Phe Ser His  
 225 230 235 240  
 768  
 tgc atg ata aaa gtt ttt ctc tct tct cta aag ttt cac atc aga agg  
 Cys Met Ile Lys Val Phe Leu Ser Ser Leu Lys Phe His Ile Arg Arg  
 245 250 255  
 816  
 ttc atc ttt ctg ttc ttc atc ctt gtg att ggt ata tac cct tct gga  
 Phe Ile Phe Leu Phe Phe Ile Leu Val Ile Gly Ile Tyr Pro Ser Gly  
 260 265 270  
 864  
 cac tct ctc atc tta att tta gga aat cct aaa ttg aaa caa aat gca  
 His Ser Leu Ile Leu Ile Leu Gly Asn Pro Lys Leu Lys Gln Asn Ala  
 275 280 285  
 900  
 aaa aag ttc ctc ctc cac agt aag tgc tgt cag tga  
 Lys Lys Phe Leu Leu His Ser Lys Cys Cys Gln  
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 <222> (111)..(111)  
 <223> The 'Xaa' at location 111 stands for Arg, or His.

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Met Leu Glu Ser His Leu Ile Ile Tyr Phe Leu Leu Ala Val Ile Gln  
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Phe Leu Leu Gly Ile Phe Thr Asn Gly Ile Ile Val Val Val Asn Gly  
 20 25 30

Ile Asp Leu Ile Lys His Arg Lys Met Ala Pro Leu Asp Leu Leu Leu  
 35 40 45

Ser Cys Leu Ala Val Ser Arg Ile Phe Leu Gln Leu Phe Ile Phe Tyr  
 50 55 60

Val Asn Val Ile Val Ile Phe Phe Ile Glu Phe Ile Met Cys Ser Ala  
 65 70 75 80

Asn Cys Ala Ile Leu Leu Phe Ile Asn Glu Leu Glu Leu Trp Leu Ala  
 85 90 95

Thr Trp Leu Gly Val Phe Tyr Cys Ala Lys Val Ala Ser Val Xaa His  
 100 105 110

Pro Leu Phe Ile Trp Leu Lys Met Arg Ile Ser Lys Leu Val Pro Trp  
 115 120 125

Met Ile Leu Gly Ser Leu Leu Tyr Val Ser Met Ile Cys Val Phe His  
 130 135 140

Ser Lys Tyr Ala Gly Phe Met Val Pro Tyr Phe Leu Arg Lys Phe Phe  
 145 150 155 160

Ser Gln Asn Ala Thr Ile Gln Lys Glu Asp Thr Leu Ala Ile Gln Ile  
 165 170 175

Phe Ser Phe Val Ala Glu Phe Ser Val Pro Leu Leu Ile Phe Leu Phe  
 180 185 190

Ala Val Leu Leu Leu Ile Phe Ser Leu Gly Arg His Thr Arg Gln Met  
 195 200 205

Arg Asn Thr Val Ala Gly Ser Arg Val Pro Gly Arg Gly Ala Pro Ile  
 210 215 220

Ser Ala Leu Leu Ser Ile Leu Ser Phe Leu Ile Leu Tyr Phe Ser His  
 225 230 235 240

Cys Met Ile Lys Val Phe Leu Ser Ser Leu Lys Phe His Ile Arg Arg  
 245 250 255

Phe Ile Phe Leu Phe Phe Ile Leu Val Ile Gly Ile Tyr Pro Ser Gly  
 260 265 270

His Ser Leu Ile Leu Ile Leu Gly Asn Pro Lys Leu Lys Gln Asn Ala  
 275 280 285

Lys Lys Phe Leu Leu His Ser Lys Cys Cys Gln  
 290 295

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 <223> y is t or c

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 atg atg gga ctc acc gag ggg gtg ttc ctg att ctg tct ggc act cag 48  
 Met Met Gly Leu Thr Glu Gly Val Phe Leu Ile Leu Ser Gly Thr Gln  
 1 5 10 15

ttc aca ctg gga att ctg gtc aat tgt ttc att gag ttg gtc aat ggt 96  
 Phe Thr Leu Gly Ile Leu Val Asn Cys Phe Ile Glu Leu Val Asn Gly  
 20 25 30

agc agc tgg ttc aag acc aag aga atg tct ttg tct gac ttc atc atc 144  
 Ser Ser Trp Phe Lys Thr Lys Arg Met Ser Leu Ser Asp Phe Ile Ile  
 35 40 45

acc acc ctg gca ctc ttg agg atc att ctg ctg tgt att atc ttg act 192



Thr	Thr	Leu	Ala	Leu	Leu	Arg	Ile	Ile	Leu	Leu	Cys	Ile	Ile	Leu	Thr	
50						55					60					
gat	agt	ttt	tta	ata	gaa	ttc	tct	ccc	aac	aca	cat	gat	tca	ggg	ata	240
Asp	Ser	Phe	Leu	Ile	Glu	Phe	Ser	Pro	Asn	Thr	His	Asp	Ser	Gly	Ile	
65					70					75				80		
ata	atg	caa	att	att	gat	gtt	tcc	tgg	aca	ttt	aca	aac	cat	ctg	agc	288
Ile	Met	Gln	Ile	Ile	Asp	Val	Ser	Trp	Thr	Phe	Thr	Asn	His	Leu	Ser	
				85					90					95		
att	tgg	ctt	gcc	acc	tgt	ctt	ggt	gtc	ctc	tac	tgc	ctg	aaa	atc	gcc	336
Ile	Trp	Leu	Ala	Thr	Cys	Leu	Gly	Val	Leu	Tyr	Cys	Leu	Lys	Ile	Ala	
			100					105					110			
agt	ttc	tct	cac	ycc	aca	ttc	ctc	tgg	ctc	aag	tgg	aga	gtt	tct	agg	384
Ser	Phe	Ser	His	Xaa	Thr	Phe	Leu	Trp	Leu	Lys	Trp	Arg	Val	Ser	Arg	
		115					120					125				
gtg	atg	gta	tgg	atg	ctg	ttg	ggt	gca	ctg	ctc	tta	tcc	tgt	ggt	agt	432
Val	Met	Val	Trp	Met	Leu	Leu	Gly	Ala	Leu	Leu	Leu	Ser	Cys	Gly	Ser	
	130					135					140					
acc	gca	tct	ctg	atc	aat	gag	ttt	aag	ctc	tat	tct	gtc	ttt	agg	gga	480
Thr	Ala	Ser	Leu	Ile	Asn	Glu	Phe	Lys	Leu	Tyr	Ser	Val	Phe	Arg	Gly	
145					150					155				160		
att	gag	gcc	acc	agg	aat	gtg	act	gaa	cac	ttc	aga	aag	aag	agg	agt	528
Ile	Glu	Ala	Thr	Arg	Asn	Val	Thr	Glu	His	Phe	Arg	Lys	Lys	Arg	Ser	
				165					170					175		
gag	tat	tat	ctg	atc	cat	gtt	ctt	ggg	act	ctg	tgg	tac	ctg	cct	ccc	576
Glu	Tyr	Tyr	Leu	Ile	His	Val	Leu	Gly	Thr	Leu	Trp	Tyr	Leu	Pro	Pro	
			180					185					190			
tta	att	gtg	tcc	ctg	gcc	tcc	tac	tct	ttg	ctc	atc	ttc	tcc	ctg	ggg	624
Leu	Ile	Val	Ser	Leu	Ala	Ser	Tyr	Ser	Leu	Leu	Ile	Phe	Ser	Leu	Gly	
		195					200					205				
agg	cac	aca	cgg	cag	atg	ctg	caa	aat	ggg	aca	agc	tcc	aga	gat	cca	672
Arg	His	Thr	Arg	Gln	Met	Leu	Gln	Asn	Gly	Thr	Ser	Ser	Arg	Asp	Pro	
		210				215					220					
acc	act	gag	gcc	cac	aag	agg	gcc	atc	aga	atc	atc	ctt	tcc	ttc	ttc	720
Thr	Thr	Glu	Ala	His	Lys	Arg	Ala	Ile	Arg	Ile	Ile	Leu	Ser	Phe	Phe	
225					230				235					240		
ttt	ctc	ttc	tta	ctt	tac	ttt	ctt	gct	ttc	tta	att	gca	tca	ttt	ggt	768
Phe	Leu	Phe	Leu	Leu	Tyr	Phe	Leu	Ala	Phe	Leu	Ile	Ala	Ser	Phe	Gly	
			245					250						255		
aat	ttc	cta	cca	aaa	acc	aag	atg	gct	aag	atg	att	ggy	gaa	gta	atg	816
Asn	Phe	Leu	Pro	Lys	Thr	Lys	Met	Ala	Lys	Met	Ile	Xaa	Glu	Val	Met	
			260					265					270			
aca	atg	ttt	tat	cct	gct	ggc	cac	tca	ttt	att	cty	att	ctg	ggg	aac	864
Thr	Met	Phe	Tyr	Pro	Ala	Gly	His	Ser	Phe	Ile	Xaa	Ile	Leu	Gly	Asn	
		275				280					285					
agt	aag	ctg	aag	cag	aca	ttt	gta	gtg	atg	ctc	cgg	tgt	gag	tct	ggt	912
Ser	Lys	Leu	Lys	Gln	Thr	Phe	Val	Val	Met	Leu	Arg	Cys	Glu	Ser	Gly	

290 295 300 951

cat ctg aag cct gga tcc aag gga ccc att ttc tct tag  
 His Leu Lys Pro Gly Ser Lys Gly Pro Ile Phe Ser  
 305 310 315

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 <222> (117)..(117)  
 <223> The 'Xaa' at location 117 stands for Pro, or Ser.

<220>  
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 <222> (269)..(269)  
 <223> The 'Xaa' at location 269 stands for Gly.

<220>  
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 <222> (284)..(284)  
 <223> The 'Xaa' at location 284 stands for Leu.

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Met Met Gly Leu Thr Glu Gly Val Phe Leu Ile Leu Ser Gly Thr Gln  
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Phe Thr Leu Gly Ile Leu Val Asn Cys Phe Ile Glu Leu Val Asn Gly  
 20 25 30

Ser Ser Trp Phe Lys Thr Lys Arg Met Ser Leu Ser Asp Phe Ile Ile  
 35 40 45

Thr Thr Leu Ala Leu Leu Arg Ile Ile Leu Leu Cys Ile Ile Leu Thr  
 50 55 60

Asp Ser Phe Leu Ile Glu Phe Ser Pro Asn Thr His Asp Ser Gly Ile  
 65 70 75 80

Ile Met Gln Ile Ile Asp Val Ser Trp Thr Phe Thr Asn His Leu Ser  
 85 90 95

Ile Trp Leu Ala Thr Cys Leu Gly Val Leu Tyr Cys Leu Lys Ile Ala  
 100 105 110

Ser Phe Ser His Xaa Thr Phe Leu Trp Leu Lys Trp Arg Val Ser Arg  
 115 120 125

Val Met Val Trp Met Leu Leu Gly Ala Leu Leu Leu Ser Cys Gly Ser  
 130 135 140  
 Thr Ala Ser Leu Ile Asn Glu Phe Lys Leu Tyr Ser Val Phe Arg Gly  
 145 150 155 160  
 Ile Glu Ala Thr Arg Asn Val Thr Glu His Phe Arg Lys Lys Arg Ser  
 165 170 175  
 Glu Tyr Tyr Leu Ile His Val Leu Gly Thr Leu Trp Tyr Leu Pro Pro  
 180 185 190  
 Leu Ile Val Ser Leu Ala Ser Tyr Ser Leu Leu Ile Phe Ser Leu Gly  
 195 200 205  
 Arg His Thr Arg Gln Met Leu Gln Asn Gly Thr Ser Ser Arg Asp Pro  
 210 215 220  
 Thr Thr Glu Ala His Lys Arg Ala Ile Arg Ile Ile Leu Ser Phe Phe  
 225 230 235 240  
 Phe Leu Phe Leu Leu Tyr Phe Leu Ala Phe Leu Ile Ala Ser Phe Gly  
 245 250 255  
 Asn Phe Leu Pro Lys Thr Lys Met Ala Lys Met Ile Xaa Glu Val Met  
 260 265 270  
 Thr Met Phe Tyr Pro Ala Gly His Ser Phe Ile Xaa Ile Leu Gly Asn  
 275 280 285  
 Ser Lys Leu Lys Gln Thr Phe Val Val Met Leu Arg Cys Glu Ser Gly  
 290 295 300  
 His Leu Lys Pro Gly Ser Lys Gly Pro Ile Phe Ser  
 305 310 315

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<222> (186)..(186)

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<222> (286)..(286)

<223> s is c or g

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<223> r is a or g

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atg ctt crs tta ttc tat tyc tct gct att att gcc tca gtt att tta	48
Met Leu Xaa Leu Phe Tyr Xaa Ser Ala Ile Ile Ala Ser Val Ile Leu	
1 5 10 15	
aat ttt gta gga atc att atg aat ctg ttt att aca gtg gtc aat tgc	96
Asn Phe Val Gly Ile Ile Met Asn Leu Phe Ile Thr Val Val Asn Cys	
20 25 30	
aaa act tgg gtc aaa agc cat aga atc tcc tct tct gat agg att ctg	144
Lys Thr Trp Val Lys Ser His Arg Ile Ser Ser Ser Asp Arg Ile Leu	
35 40 45	
ttc agc ctg ggc atc acc agg ttt ctt atg ctg gga cta ttw ctg gtg	192
Phe Ser Leu Gly Ile Thr Arg Phe Leu Met Leu Gly Leu Xaa Leu Val	
50 55 60	
aac acc atc tac ttc gtc tct tca aat acg gaa agg tca gtc tac ctg	240
Asn Thr Ile Tyr Phe Val Ser Ser Asn Thr Glu Arg Ser Val Tyr Leu	
65 70 75 80	
tct gct ttt ttt gtg ttg tgt ttc atg ttt ttg gac tog agc agt stc	288
Ser Ala Phe Phe Val Leu Cys Phe Met Phe Leu Asp Ser Ser Ser Xaa	
85 90 95	
tgg ttt gtg acc ttg ctg aat atc ttg tac tgt gtg aag att act aac	336
Trp Phe Val Thr Leu Leu Asn Ile Leu Tyr Cys Val Lys Ile Thr Asn	
100 105 110	
ttc caa cac tca gtg ttt ctg ctg ctg aag cgg aat atc tcc cca aag	384
Phe Gln His Ser Val Phe Leu Leu Leu Lys Arg Asn Ile Ser Pro Lys	
115 120 125	
atc ccc agg ctg ctg ctg gcc tgt gtg ctg att tct gct ttc acc act	432
Ile Pro Arg Leu Leu Leu Ala Cys Val Leu Ile Ser Ala Phe Thr Thr	
130 135 140	
tgc ctg tac atc acg ctt agc cag gca tca cct ttt cct gaa ctt gtg	480
Cys Leu Tyr Ile Thr Leu Ser Gln Ala Ser Pro Phe Pro Glu Leu Val	

145	150	155	160	
act acg aga aat aac aca tca ttt aat atc art gag ggc atc ttg tct				528
Thr Thr Arg Asn Asn Thr Ser Phe Asn Ile Xaa Glu Gly Ile Leu Ser	165	170	175	
tta gtg gtt tct ttg gtc ttg agc tca tct ctc cag ttc atc att aat				576
Leu Val Val Ser Leu Val Leu Ser Ser Ser Leu Gln Phe Ile Ile Asn	180	185	190	
gtg act tct gct tcc ttg cta ata cac tcc ttg agg aga cat ata cag				624
Val Thr Ser Ala Ser Leu Leu Ile His Ser Leu Arg Arg His Ile Gln	195	200	205	
aag atg cag aaa aat gcc act ggt ttc tgg aat ccc cag acg gaa gct				672
Lys Met Gln Lys Asn Ala Thr Gly Phe Trp Asn Pro Gln Thr Glu Ala	210	215	220	
cat gta ggt gct atg aag ctg atg gtc tat ttc ctc atc ctc tac att				720
His Val Gly Ala Met Lys Leu Met Val Tyr Phe Leu Ile Leu Tyr Ile	225	230	235	240
cca tat tca gtt gct acc ctg gtc cag tat ctc ccc ttt tat gca ggg				768
Pro Tyr Ser Val Ala Thr Leu Val Gln Tyr Leu Pro Phe Tyr Ala Gly	245	250	255	
atg gat atg ggg acc aaa tcc att tgt ctg att ttt gcc acc ctt tac				816
Met Asp Met Gly Thr Lys Ser Ile Cys Leu Ile Phe Ala Thr Leu Tyr	260	265	270	
tct cca gga cat tct gtt ctc att att atc aca cat cct aaa ctg aaa				864
Ser Pro Gly His Ser Val Leu Ile Ile Ile Thr His Pro Lys Leu Lys	275	280	285	
aca aca gca aag aag att ctt tgt ttc aaa aaa tag				900
Thr Thr Ala Lys Lys Ile Leu Cys Phe Lys Lys	290	295		

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 <222> (3)..(3)  
 <223> The 'Xaa' at location 3 stands for Arg, Gln, or His.

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 <222> (7)..(7)  
 <223> The 'Xaa' at location 7 stands for Ser, or Phe.

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 <222> (62)..(62)  
 <223> The 'Xaa' at location 62 stands for Leu, or Phe.

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<222> (96)..(96)

<223> The 'Xaa' at location 96 stands for Val, or Leu.

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<222> (171)..(171)

<223> The 'Xaa' at location 171 stands for Ser, or Asn.

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Met Leu Xaa Leu Phe Tyr Xaa Ser Ala Ile Ile Ala Ser Val Ile Leu  
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Asn Phe Val Gly Ile Ile Met Asn Leu Phe Ile Thr Val Val Asn Cys  
20 25 30

Lys Thr Trp Val Lys Ser His Arg Ile Ser Ser Ser Asp Arg Ile Leu  
35 40 45

Phe Ser Leu Gly Ile Thr Arg Phe Leu Met Leu Gly Leu Xaa Leu Val  
50 55 60

Asn Thr Ile Tyr Phe Val Ser Ser Asn Thr Glu Arg Ser Val Tyr Leu  
65 70 75 80

Ser Ala Phe Phe Val Leu Cys Phe Met Phe Leu Asp Ser Ser Ser Xaa  
85 90 95

Trp Phe Val Thr Leu Leu Asn Ile Leu Tyr Cys Val Lys Ile Thr Asn  
100 105 110

Phe Gln His Ser Val Phe Leu Leu Leu Lys Arg Asn Ile Ser Pro Lys  
115 120 125

Ile Pro Arg Leu Leu Leu Ala Cys Val Leu Ile Ser Ala Phe Thr Thr  
130 135 140

Cys Leu Tyr Ile Thr Leu Ser Gln Ala Ser Pro Phe Pro Glu Leu Val  
145 150 155 160

Thr Thr Arg Asn Asn Thr Ser Phe Asn Ile Xaa Glu Gly Ile Leu Ser  
165 170 175

Leu Val Val Ser Leu Val Leu Ser Ser Ser Leu Gln Phe Ile Ile Asn  
180 185 190

Val Thr Ser Ala Ser Leu Leu Ile His Ser Leu Arg Arg His Ile Gln  
195 200 205

Lys Met Gln Lys Asn Ala Thr Gly Phe Trp Asn Pro Gln Thr Glu Ala  
210 215 220

His Val Gly Ala Met Lys Leu Met Val Tyr Phe Leu Ile Leu Tyr Ile  
225 230 235 240

Pro Tyr Ser Val Ala Thr Leu Val Gln Tyr Leu Pro Phe Tyr Ala Gly  
245 250 255

Met Asp Met Gly Thr Lys Ser Ile Cys Leu Ile Phe Ala Thr Leu Tyr  
260 265 270

Ser Pro Gly His Ser Val Leu Ile Ile Ile Thr His Pro Lys Leu Lys  
275 280 285

Thr Thr Ala Lys Lys Ile Leu Cys Phe Lys Lys  
290 295

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atg ctg agc gct ggc cta gga ctg ctg atg ctg gtg gca gtg gtt gaa	48
Met Leu Ser Ala Gly Leu Gly Leu Leu Met Leu Val Ala Val Val Glu	
1 5 10 15	
ttt ctc atc ggt tta att gga aat gga akc ctg gtg gtc tgg agt ttt	96
Phe Leu Ile Gly Leu Ile Gly Asn Gly Xaa Leu Val Val Trp Ser Phe	
20 25 30	
aga gaa tgg atc aga aaa ttc aac tgg tcc tca tat aac ctc att atc	144
Arg Glu Trp Ile Arg Lys Phe Asn Trp Ser Ser Tyr Asn Leu Ile Ile	
35 40 45	
ctg ggc ctg gct ggc tgc cga ttt ctc ctg cag tgg ctg atc att ttg	192
Leu Gly Leu Ala Gly Cys Arg Phe Leu Leu Gln Trp Leu Ile Ile Leu	
50 55 60	
gac tta agc ttg ttt cca ctt ttc cag agc agc cgt tgg ctt ygc tat	240
Asp Leu Ser Leu Phe Pro Leu Phe Gln Ser Ser Arg Trp Leu Xaa Tyr	
65 70 75 80	
ctt agt atc ttc tgg gtc ctg gta agc cag gcc agc tta tgg ttt gcc	288
Leu Ser Ile Phe Trp Val Leu Val Ser Gln Ala Ser Leu Trp Phe Ala	
85 90 95	
acc ttc ctc agt gtc ttc tat tgc aag aag atc acg acc ttc gat cgc	336
Thr Phe Leu Ser Val Phe Tyr Cys Lys Lys Ile Thr Thr Phe Asp Arg	
100 105 110	
cyg gcc tac ttg tgg ctg aag cag agr gcc tat aac ctg agt ctc tgg	384
Xaa Ala Tyr Leu Trp Leu Lys Gln Arg Ala Tyr Asn Leu Ser Leu Trp	
115 120 125	
tgc ctt ctg ggc tac ttt ata atc aat ttg tta ctt aca gtc caa att	432
Cys Leu Leu Gly Tyr Phe Ile Ile Asn Leu Leu Leu Thr Val Gln Ile	
130 135 140	
ggc tta aca ttc tat cat cct ccc caa gga aac agc agc att cgg tat	480
Gly Leu Thr Phe Tyr His Pro Pro Gln Gly Asn Ser Ser Ile Arg Tyr	
145 150 155 160	
ccc ttt gaa agc tgg cag trc ctg tat gca ttt cag ctc aat tca gga	528
Pro Phe Glu Ser Trp Gln Xaa Leu Tyr Ala Phe Gln Leu Asn Ser Gly	
165 170 175	
agt tat ttg cct tta gtg gtg ttt ctt gtt tcc tct ggg atg ctg att	576
Ser Tyr Leu Pro Leu Val Val Phe Leu Val Ser Ser Gly Met Leu Ile	
180 185 190	
gtc tct ttg tat aca cac cac aag aag atg aag gtc cat tca gct ggt	624
Val Ser Leu Tyr Thr His His Lys Lys Met Lys Val His Ser Ala Gly	
195 200 205	
agg agg gat gtc crg gcc aag gct cac atc act gcg ctg aag tcc ttg	672
Arg Arg Asp Val Xaa Ala Lys Ala His Ile Thr Ala Leu Lys Ser Leu	
210 215 220	



ggc tgc ttc ctc tta ctt cac ctg gtt tat atc atg gcc agc ccc ttc 720  
 Gly Cys Phe Leu Leu Leu His Leu Val Tyr Ile Met Ala Ser Pro Phe  
 225 230 235 240  
 tcc atc acc tcc aag act tat cct cct gat ctc acc agt gtc ttc atc 768  
 Ser Ile Thr Ser Lys Thr Tyr Pro Pro Asp Leu Thr Ser Val Phe Ile  
 245 250 255  
 tgg gag aca ctc atg gca gcc tat cct tct ctt cat tct ctc ata ttg 816  
 Trp Glu Thr Leu Met Ala Ala Tyr Pro Ser Leu His Ser Leu Ile Leu  
 260 265 270  
 atc atg ggg att cct agg gtg aag cag act tgt cag aag atc ctg tgg 864  
 Ile Met Gly Ile Pro Arg Val Lys Gln Thr Cys Gln Lys Ile Leu Trp  
 275 280 285  
 aag aca gtg tgt gct ckg aga tgc tgg ggc cca tga 900  
 Lys Thr Val Cys Ala Xaa Arg Cys Trp Gly Pro  
 290 295

<210> 8  
 <211> 299  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (26)..(26)  
 <223> The 'Xaa' at location 26 stands for Ser, or Ile.

<220>  
 <221> misc\_feature  
 <222> (79)..(79)  
 <223> The 'Xaa' at location 79 stands for Arg, or Cys.

<220>  
 <221> misc\_feature  
 <222> (113)..(113)  
 <223> The 'Xaa' at location 113 stands for Pro, or Leu.

<220>  
 <221> misc\_feature  
 <222> (167)..(167)  
 <223> The 'Xaa' at location 167 stands for Cys, or Tyr.

<220>  
 <221> misc\_feature  
 <222> (213)..(213)  
 <223> The 'Xaa' at location 213 stands for Arg, or Gln.

<220>  
 <221> misc\_feature  
 <222> (294)..(294)  
 <223> The 'Xaa' at location 294 stands for Arg, or Leu.

<400> 8

Met Leu Ser Ala Gly Leu Gly Leu Leu Met Leu Val Ala Val Val Glu  
 1 5 10 15

Phe Leu Ile Gly Leu Ile Gly Asn Gly Xaa Leu Val Val Trp Ser Phe  
 20 25 30

Arg Glu Trp Ile Arg Lys Phe Asn Trp Ser Ser Tyr Asn Leu Ile Ile  
 35 40 45

Leu Gly Leu Ala Gly Cys Arg Phe Leu Leu Gln Trp Leu Ile Ile Leu  
 50 55 60

Asp Leu Ser Leu Phe Pro Leu Phe Gln Ser Ser Arg Trp Leu Xaa Tyr  
 65 70 75 80

Leu Ser Ile Phe Trp Val Leu Val Ser Gln Ala Ser Leu Trp Phe Ala  
 85 90 95

Thr Phe Leu Ser Val Phe Tyr Cys Lys Lys Ile Thr Thr Phe Asp Arg  
 100 105 110

Xaa Ala Tyr Leu Trp Leu Lys Gln Arg Ala Tyr Asn Leu Ser Leu Trp  
 115 120 125

Cys Leu Leu Gly Tyr Phe Ile Ile Asn Leu Leu Leu Thr Val Gln Ile  
 130 135 140

Gly Leu Thr Phe Tyr His Pro Pro Gln Gly Asn Ser Ser Ile Arg Tyr  
 145 150 155 160

Pro Phe Glu Ser Trp Gln Xaa Leu Tyr Ala Phe Gln Leu Asn Ser Gly  
 165 170 175

Ser Tyr Leu Pro Leu Val Val Phe Leu Val Ser Ser Gly Met Leu Ile  
 180 185 190

Val Ser Leu Tyr Thr His His Lys Lys Met Lys Val His Ser Ala Gly  
 195 200 205

Arg Arg Asp Val Xaa Ala Lys Ala His Ile Thr Ala Leu Lys Ser Leu  
 210 215 220

Gly Cys Phe Leu Leu Leu His Leu Val Tyr Ile Met Ala Ser Pro Phe  
 225 230 235 240

Ser Ile Thr Ser Lys Thr Tyr Pro Pro Asp Leu Thr Ser Val Phe Ile  
 245 250 255

Trp Glu Thr Leu Met Ala Ala Tyr Pro Ser Leu His Ser Leu Ile Leu  
                   260                  265                  270

Ile Met Gly Ile Pro Arg Val Lys Gln Thr Cys Gln Lys Ile Leu Trp  
           275                  280                  285

Lys Thr Val Cys Ala Xaa Arg Cys Trp Gly Pro  
       290                  295

<210> 9  
 <211> 957  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(957)  
 <223> y is t or c

<220>  
 <221> variation  
 <222> (788)..(788)  
 <223> y is t or c

<400> 9  
 atg gca gat aaa gtg cag act act tta ttg ttc tta gca gtt gga gag 48  
 Met Ala Asp Lys Val Gln Thr Thr Leu Leu Phe Leu Ala Val Gly Glu  
 1                  5                  10                  15  
 ttt tca gtg ggg atc tta ggg aat gca ttc att gga ttg gta aac tgc 96  
 Phe Ser Val Gly Ile Leu Gly Asn Ala Phe Ile Gly Leu Val Asn Cys  
                   20                  25                  30  
 atg gac tgg gtc aag aag agg aaa att gcc tcc att gat tta atc ctc 144  
 Met Asp Trp Val Lys Lys Arg Lys Ile Ala Ser Ile Asp Leu Ile Leu  
                   35                  40                  45  
 aca agt ctg gcc ata tcc aga att tgt cta ttg tgc gta ata cta tta 192  
 Thr Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Leu Leu  
                   50                  55                  60  
 gat tgt ttt ata ttg gtg cta tat cca gat gtc tat gcc act ggt aaa 240  
 Asp Cys Phe Ile Leu Val Leu Tyr Pro Asp Val Tyr Ala Thr Gly Lys  
 65                  70                  75                  80  
 gaa atg aga atc att gac ttc ttc tgg aca cta acc aat cat tta agt 288  
 Glu Met Arg Ile Ile Asp Phe Phe Trp Thr Leu Thr Asn His Leu Ser  
                   85                  90                  95  
 atc tgg ttt gca acc tgc ctc agc att tac tat ttc ttc aag ata ggt 336  
 Ile Trp Phe Ala Thr Cys Leu Ser Ile Tyr Tyr Phe Phe Lys Ile Gly  
                   100                  105                  110  
 aat ttc ttt cac cca ctt ttc ctc tgg atg aag tgg aga att gac agg 384  
 Asn Phe Phe His Pro Leu Phe Leu Trp Met Lys Trp Arg Ile Asp Arg  
                   115                  120                  125

gtg att tcc tgg att cta ctg ggg tgc gtg gtt ctc tct gtg ttt att 432  
Val Ile Ser Trp Ile Leu Leu Gly Cys Val Val Leu Ser Val Phe Ile  
130 135 140

agc ctt cca gcc act gag aat ttg aac gct gat ttc agg ttt tgt gtg 480  
Ser Leu Pro Ala Thr Glu Asn Leu Asn Ala Asp Phe Arg Phe Cys Val  
145 150 155 160

aag gca aag agg aaa aca aac tta act tgg agt tgc aga gta aat aaa 528  
Lys Ala Lys Arg Lys Thr Asn Leu Thr Trp Ser Cys Arg Val Asn Lys  
165 170 175

act caa cat gct tct acc aag tta ttt ctc aac ctg gca acg ctg ctc 576  
Thr Gln His Ala Ser Thr Lys Leu Phe Leu Asn Leu Ala Thr Leu Leu  
180 185 190

ccc ttt tgt gtg tgc cta atg tcc ttt ttc ctc ttg atc ctc tcc ctg 624  
Pro Phe Cys Val Cys Leu Met Ser Phe Phe Leu Leu Ile Leu Ser Leu  
195 200 205

cgg aga cat atc agg cga atg cag ctc agt gcc aca ggg tgc aga gac 672  
Arg Arg His Ile Arg Arg Met Gln Leu Ser Ala Thr Gly Cys Arg Asp  
210 215 220

ccc agc aca gaa gcc cat gtg aga gcc ctg aaa gct gtc att tcc ttc 720  
Pro Ser Thr Glu Ala His Val Arg Ala Leu Lys Ala Val Ile Ser Phe  
225 230 235 240

ctt ctc ctc ttt att gcc tac tat ttg tcc ttt ctc att gcc acc tcc 768  
Leu Leu Leu Phe Ile Ala Tyr Tyr Leu Ser Phe Leu Ile Ala Thr Ser  
245 250 255

agc tac ttt atg cca gag ayg gaa tta gct gtg att ttt ggt gag tcc 816  
Ser Tyr Phe Met Pro Glu Xaa Glu Leu Ala Val Ile Phe Gly Glu Ser  
260 265 270

ata gct cta atc tac ccc tca agt cat tca ttt atc cta ata ctg ggg 864  
Ile Ala Leu Ile Tyr Pro Ser Ser His Ser Phe Ile Leu Ile Leu Gly  
275 280 285

aac aat aaa tta aga cat gca tct cta aag gtg att tgg aaa gta atg 912  
Asn Asn Lys Leu Arg His Ala Ser Leu Lys Val Ile Trp Lys Val Met  
290 295 300

tct att cta aaa gga aga aaa ttc caa caa cat aaa caa atc tga 957  
Ser Ile Leu Lys Gly Arg Lys Phe Gln Gln His Lys Gln Ile  
305 310 315

&lt;210&gt; 10

&lt;211&gt; 318

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (263)..(263)

&lt;223&gt; The 'Xaa' at location 263 stands for Thr, or Met.

&lt;400&gt; 10

Met Ala Asp Lys Val Gln Thr Thr Leu Leu Phe Leu Ala Val Gly Glu  
 1 5 10 15

Phe Ser Val Gly Ile Leu Gly Asn Ala Phe Ile Gly Leu Val Asn Cys  
 20 25 30

Met Asp Trp Val Lys Lys Arg Lys Ile Ala Ser Ile Asp Leu Ile Leu  
 35 40 45

Thr Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Leu Leu  
 50 55 60

Asp Cys Phe Ile Leu Val Leu Tyr Pro Asp Val Tyr Ala Thr Gly Lys  
 65 70 75 80

Glu Met Arg Ile Ile Asp Phe Phe Trp Thr Leu Thr Asn His Leu Ser  
 85 90 95

Ile Trp Phe Ala Thr Cys Leu Ser Ile Tyr Tyr Phe Phe Lys Ile Gly  
 100 105 110

Asn Phe Phe His Pro Leu Phe Leu Trp Met Lys Trp Arg Ile Asp Arg  
 115 120 125

Val Ile Ser Trp Ile Leu Leu Gly Cys Val Val Leu Ser Val Phe Ile  
 130 135 140

Ser Leu Pro Ala Thr Glu Asn Leu Asn Ala Asp Phe Arg Phe Cys Val  
 145 150 155 160

Lys Ala Lys Arg Lys Thr Asn Leu Thr Trp Ser Cys Arg Val Asn Lys  
 165 170 175

Thr Gln His Ala Ser Thr Lys Leu Phe Leu Asn Leu Ala Thr Leu Leu  
 180 185 190

Pro Phe Cys Val Cys Leu Met Ser Phe Phe Leu Leu Ile Leu Ser Leu  
 195 200 205

Arg Arg His Ile Arg Arg Met Gln Leu Ser Ala Thr Gly Cys Arg Asp  
 210 215 220

Pro Ser Thr Glu Ala His Val Arg Ala Leu Lys Ala Val Ile Ser Phe  
 225 230 235 240

Leu Leu Leu Phe Ile Ala Tyr Tyr Leu Ser Phe Leu Ile Ala Thr Ser



acc aat tta gtt atc gcc aga att tgt ttg atc agt gta atg gtt gta Thr Asn Leu Val Ile Ala Arg Ile Cys Leu Ile Ser Val Met Val Val 50 55 60	192
aat ggc att gta ata gta ctg aac cca gat gtt tat aca aaa aat aaa Asn Gly Ile Val Ile Val Leu Asn Pro Asp Val Tyr Thr Lys Asn Lys 65 70 75 80	240
caa cag ata gtc att ttt acc ttc tgg aca ttt gcc aac tac tta aat Gln Gln Ile Val Ile Phe Thr Phe Trp Thr Phe Ala Asn Tyr Leu Asn 85 90 95	288
atg tgg att acc acc tgc ctt aat gtc ttc tat ttt ctg aag ata gcc Met Trp Ile Thr Thr Cys Leu Asn Val Phe Tyr Phe Leu Lys Ile Ala 100 105 110	336
agt tcc tct cat cca ctt ttt ctc tgg ctg aag tgg aaa att gat atg Ser Ser Ser His Pro Leu Phe Leu Trp Leu Lys Trp Lys Ile Asp Met 115 120 125	384
gtg gtg cac tgg atc ctg ctg gga tgc ttt gcc att tcc ttg ttg gtc Val Val His Trp Ile Leu Leu Gly Cys Phe Ala Ile Ser Leu Leu Val 130 135 140	432
agc ctt ata gca gca ata gta ctg agt tgt gat tat agg ttt cat gca Ser Leu Ile Ala Ala Ile Val Leu Ser Cys Asp Tyr Arg Phe His Ala 145 150 155 160	480
att gcc aaa cat aaa rga aac att act gaa atg ttc cat gtg agt aaa Ile Ala Lys His Lys Xaa Asn Ile Thr Glu Met Phe His Val Ser Lys 165 170 175	528
ata cca tac ttt gaa ccc ttr act ctc ttt aac ctg ttt gca att gtc Ile Pro Tyr Phe Glu Pro Xaa Thr Leu Phe Asn Leu Phe Ala Ile Val 180 185 190	576
cca ttt att gtg tca ctg ata tca ttt ttc ctt tta gta aga tct tta Pro Phe Ile Val Ser Leu Ile Ser Phe Phe Leu Leu Val Arg Ser Leu 195 200 205	624
tgg aga cat acc aag caa ata aaa ctc tat gct acc ggc agt aga gac Trp Arg His Thr Lys Gln Ile Lys Leu Tyr Ala Thr Gly Ser Arg Asp 210 215 220	672
ccc agc aca gaa gtt cat gtg aga gcc att aaa act atg act tca ttt Pro Ser Thr Glu Val His Val Arg Ala Ile Lys Thr Met Thr Ser Phe 225 230 235 240	720
atc ttc ttt ttt ttc cta tac tat att tct tct att ttg atg acc ttt Ile Phe Phe Phe Phe Leu Tyr Tyr Ile Ser Ser Ile Leu Met Thr Phe 245 250 255	768
agc tat ctt atg aca aaa tac aag tta gct gtg gag ttt gga gag att Ser Tyr Leu Met Thr Lys Tyr Lys Leu Ala Val Glu Phe Gly Glu Ile 260 265 270	816
gca gca att ctc yac ccc ttg ggt cac tca ctt att tta att gtt tta Ala Ala Ile Leu Xaa Pro Leu Gly His Ser Leu Ile Leu Ile Val Leu 275 280 285	864

aat aat aaa ctg agg cag aca ttt gtc aga atg ctg aca tgt aga aaa 912  
 Asn Asn Lys Leu Arg Gln Thr Phe Val Arg Met Leu Thr Cys Arg Lys  
 290 295 300

att gcc tgc rtg ata tga 930  
 Ile Ala Cys Xaa Ile  
 305

<210> 12  
 <211> 309  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (166)..(166)  
 <223> The 'Xaa' at location 166 stands for Gly, or Arg.

<220>  
 <221> misc\_feature  
 <222> (183)..(183)  
 <223> The 'Xaa' at location 183 stands for Leu.

<220>  
 <221> misc\_feature  
 <222> (277)..(277)  
 <223> The 'Xaa' at location 277 stands for His, or Tyr.

<220>  
 <221> misc\_feature  
 <222> (308)..(308)  
 <223> The 'Xaa' at location 308 stands for Val, or Met.

<400> 12

Met Phe Ser Pro Ala Asp Asn Ile Phe Ile Ile Leu Ile Thr Gly Glu  
 1 5 10 15

Phe Ile Leu Gly Ile Leu Gly Asn Gly Tyr Ile Ala Leu Val Asn Trp  
 20 25 30

Ile Asp Trp Ile Lys Lys Lys Lys Ile Ser Thr Val Asp Tyr Ile Leu  
 35 40 45

Thr Asn Leu Val Ile Ala Arg Ile Cys Leu Ile Ser Val Met Val Val  
 50 55 60

Asn Gly Ile Val Ile Val Leu Asn Pro Asp Val Tyr Thr Lys Asn Lys  
 65 70 75 80

Gln Gln Ile Val Ile Phe Thr Phe Trp Thr Phe Ala Asn Tyr Leu Asn  
 85 90 95

Met Trp Ile Thr Thr Cys Leu Asn Val Phe Tyr Phe Leu Lys Ile Ala



100

105

110

Ser Ser Ser His Pro Leu Phe Leu Trp Leu Lys Trp Lys Ile Asp Met  
 115 120 125

Val Val His Trp Ile Leu Leu Gly Cys Phe Ala Ile Ser Leu Leu Val  
 130 135 140

Ser Leu Ile Ala Ala Ile Val Leu Ser Cys Asp Tyr Arg Phe His Ala  
 145 150 155 160

Ile Ala Lys His Lys Xaa Asn Ile Thr Glu Met Phe His Val Ser Lys  
 165 170 175

Ile Pro Tyr Phe Glu Pro Xaa Thr Leu Phe Asn Leu Phe Ala Ile Val  
 180 185 190

Pro Phe Ile Val Ser Leu Ile Ser Phe Phe Leu Leu Val Arg Ser Leu  
 195 200 205

Trp Arg His Thr Lys Gln Ile Lys Leu Tyr Ala Thr Gly Ser Arg Asp  
 210 215 220

Pro Ser Thr Glu Val His Val Arg Ala Ile Lys Thr Met Thr Ser Phe  
 225 230 235 240

Ile Phe Phe Phe Phe Leu Tyr Tyr Ile Ser Ser Ile Leu Met Thr Phe  
 245 250 255

Ser Tyr Leu Met Thr Lys Tyr Lys Leu Ala Val Glu Phe Gly Glu Ile  
 260 265 270

Ala Ala Ile Leu Xaa Pro Leu Gly His Ser Leu Ile Leu Ile Val Leu  
 275 280 285

Asn Asn Lys Leu Arg Gln Thr Phe Val Arg Met Leu Thr Cys Arg Lys  
 290 295 300

Ile Ala Cys Xaa Ile  
 305

<210> 13  
 <211> 939  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(939)

<220>  
 <221> variation  
 <222> (201)..(201)  
 <223> m is a or c

<220>  
 <221> variation  
 <222> (450)..(450)  
 <223> w is t or a

<220>  
 <221> variation  
 <222> (560)..(560)  
 <223> y is c or t

<220>  
 <221> variation  
 <222> (867)..(867)  
 <223> k is g or t

<220>  
 <221> variation  
 <222> .(880)..(880)  
 <223> m is a or c

<400> 13

atg cca agt gca ata gag gca ata tat att att tta att gct ggt gaa	48
Met Pro Ser Ala Ile Glu Ala Ile Tyr Ile Ile Leu Ile Ala Gly Glu	
1 5 10 15	
ttg acc ata ggg att tgg gga aat gga ttc att gta cta gtt aac tgc	96
Leu Thr Ile Gly Ile Trp Gly Asn Gly Phe Ile Val Leu Val Asn Cys	
20 25 30	
att gac tgg ctc aaa aga aga gat att tcc ttg att gac atc atc ctg	144
Ile Asp Trp Leu Lys Arg Arg Asp Ile Ser Leu Ile Asp Ile Ile Leu	
35 40 45	
atc agc ttg gcc atc tcc aga atc tgt ctg ctg tgt gta ata tca tta	192
Ile Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Ser Leu	
50 55 60	
gat ggc ttm ttt atg ctg ctc ttt cca ggt aca tat ggc aat agc gtg	240
Asp Gly Xaa Phe Met Leu Leu Phe Pro Gly Thr Tyr Gly Asn Ser Val	
65 70 75 80	
cta gta agc att gtg aat gtt gtc tgg aca ttt gcc aat aat tca agt	288
Leu Val Ser Ile Val Asn Val Val Trp Thr Phe Ala Asn Asn Ser Ser	
85 90 95	
ctc tgg ttt act tct tgc ctc agt atc ttc tat tta ctc aag ata gcc	336
Leu Trp Phe Thr Ser Cys Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala	
100 105 110	
aat ata tcg cac cca ttt ttc ttc tgg ctg aag cta aag atc aac aag	384
Asn Ile Ser His Pro Phe Phe Thr Trp Leu Lys Leu Lys Ile Asn Lys	
115 120 125	

gtc atg ctt gcg att ctt ctg ggg tcc ttt ctt atc tct tta att att 432  
 Val Met Leu Ala Ile Leu Leu Gly Ser Phe Leu Ile Ser Leu Ile Ile  
 130 135 140

agt gtt cca aag aat gaw gat atg tgg tat cac ctt ttc aaa gtc agt 480  
 Ser Val Pro Lys Asn Xaa Asp Met Trp Tyr His Leu Phe Lys Val Ser  
 145 150 155 160

cat gaa gaa aac att act tgg aaa ttc aaa gtg agt aaa att cca ggt 528  
 His Glu Glu Asn Ile Thr Trp Lys Phe Lys Val Ser Lys Ile Pro Gly  
 165 170 175

act ttc aaa cag tta acc ctg aac ctg ggg gyg atg gtt ccc ttt atc 576  
 Thr Phe Lys Gln Leu Thr Leu Asn Leu Gly Xaa Met Val Pro Phe Ile  
 180 185 190

ctt tgc ctg atc tca ttt ttc ttg tta ctt ttc tcc cta gtt aga cac 624  
 Leu Cys Leu Ile Ser Phe Phe Leu Leu Leu Phe Ser Leu Val Arg His  
 195 200 205

acc aag cag att cga ctg cat gct aca ggg ttc aga gac ccc agt aca 672  
 Thr Lys Gln Ile Arg Leu His Ala Thr Gly Phe Arg Asp Pro Ser Thr  
 210 215 220

gag gcc cac atg agg gcc ata aag gca gtg atc atc ttt ctg ctc ctc 720  
 Glu Ala His Met Arg Ala Ile Lys Ala Val Ile Ile Phe Leu Leu Leu  
 225 230 235 240

ctc atc gtg tac tac cca gtc ttt ctt gtt atg acc tct agc gct ctg 768  
 Leu Ile Val Tyr Tyr Pro Val Phe Leu Val Met Thr Ser Ser Ala Leu  
 245 250 255

att cct cag gga aaa tta gtg ttg atg att ggt gac ata gta act gtc 816  
 Ile Pro Gln Gly Lys Leu Val Leu Met Ile Gly Asp Ile Val Thr Val  
 260 265 270

att ttc cca tca agc cat tca ttc att cta att atg gga aat agc aag 864  
 Ile Phe Pro Ser Ser His Ser Phe Ile Leu Ile Met Gly Asn Ser Lys  
 275 280 285

ttg agg gaa gct ttt mtg aag atg tta aga ttt gtg aag tgt ttc ctt 912  
 Xaa Arg Glu Ala Phe Xaa Lys Met Leu Arg Phe Val Lys Cys Phe Leu  
 290 295 300

aga aga aga aag cct ttt gtt cca tag 939  
 Arg Arg Arg Lys Pro Phe Val Pro  
 305 310

<210> 14  
 <211> 312  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (67)..(67)  
 <223> The 'Xaa' at location 67 stands for Leu, or Phe.

<220>

<221> misc\_feature  
 <222> (150)..(150)  
 <223> The 'Xaa' at location 150 stands for Glu, or Asp.

<220>  
 <221> misc\_feature  
 <222> (187)..(187)  
 <223> The 'Xaa' at location 187 stands for Ala, or Val.

<220>  
 <221> misc\_feature  
 <222> (289)..(289)  
 <223> The 'Xaa' at location 289 stands for Leu, or Phe.

<220>  
 <221> misc\_feature  
 <222> (294)..(294)  
 <223> The 'Xaa' at location 294 stands for Met, or Leu.

<400> 14

Met Pro Ser Ala Ile Glu Ala Ile Tyr Ile Ile Leu Ile Ala Gly Glu  
 1 5 10 15

Leu Thr Ile Gly Ile Trp Gly Asn Gly Phe Ile Val Leu Val Asn Cys  
 20 25 30

Ile Asp Trp Leu Lys Arg Arg Asp Ile Ser Leu Ile Asp Ile Ile Leu  
 35 40 45

Ile Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Ser Leu  
 50 55 60

Asp Gly Xaa Phe Met Leu Leu Phe Pro Gly Thr Tyr Gly Asn Ser Val  
 65 70 75 80

Leu Val Ser Ile Val Asn Val Val Trp Thr Phe Ala Asn Asn Ser Ser  
 85 90 95

Leu Trp Phe Thr Ser Cys Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala  
 100 105 110

Asn Ile Ser His Pro Phe Phe Phe Trp Leu Lys Leu Lys Ile Asn Lys  
 115 120 125

Val Met Leu Ala Ile Leu Leu Gly Ser Phe Leu Ile Ser Leu Ile Ile  
 130 135 140

Ser Val Pro Lys Asn Xaa Asp Met Trp Tyr His Leu Phe Lys Val Ser  
 145 150 155 160

His Glu Glu Asn Ile Thr Trp Lys Phe Lys Val Ser Lys Ile Pro Gly  
 165 170 175

Thr Phe Lys Gln Leu Thr Leu Asn Leu Gly Xaa Met Val Pro Phe Ile  
 180 185 190

Leu Cys Leu Ile Ser Phe Phe Leu Leu Leu Phe Ser Leu Val Arg His  
 195 200 205

Thr Lys Gln Ile Arg Leu His Ala Thr Gly Phe Arg Asp Pro Ser Thr  
 210 215 220

Glu Ala His Met Arg Ala Ile Lys Ala Val Ile Ile Phe Leu Leu Leu  
 225 230 235 240

Leu Ile Val Tyr Tyr Pro Val Phe Leu Val Met Thr Ser Ser Ala Leu  
 245 250 255

Ile Pro Gln Gly Lys Leu Val Leu Met Ile Gly Asp Ile Val Thr Val  
 260 265 270

Ile Phe Pro Ser Ser His Ser Phe Ile Leu Ile Met Gly Asn Ser Lys  
 275 280 285

Xaa Arg Glu Ala Phe Xaa Lys Met Leu Arg Phe Val Lys Cys Phe Leu  
 290 295 300

Arg Arg Arg Lys Pro Phe Val Pro  
 305 310

<210> 15  
 <211> 924  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(924)

<220>  
 <221> variation  
 <222> (80)..(80)  
 <223> r is g or a

<220>  
 <221> variation  
 <222> (467)..(467)  
 <223> y is c or t

<220>

<221> variation  
 <222> (521)..(521)  
 <223> m i s c o r a

<220>  
 <221> variation  
 <222> (564)..(564)  
 <223> r i s a o r g

<220>  
 <221> variation  
 <222> (627)..(627)  
 <223> r i s a o r g

<400> 15

atg cta cgt gta gtg gaa ggc atc ttc att ttt gtt gta gtt agt gag	48
Met Leu Arg Val Val Glu Gly Ile Phe Ile Phe Val Val Val Ser Glu	
1 5 10 15	
tca gtg ttt ggg gtt ttg ggg aat gga ttt att gga ctt gta aac tgc	96
Ser Val Phe Gly Val Leu Gly Asn Gly Phe Ile Gly Leu Val Asn Cys	
20 25 30	
att gac tgt gcc aag aat aag ttr tct acg att ggc ttt att ctc acc	144
Ile Asp Cys Ala Lys Asn Lys Xaa Ser Thr Ile Gly Phe Ile Leu Thr	
35 40 45	
ggc tta gct att tca aga att ttt ctg ata tgg ata ata att aca gat	192
Gly Leu Ala Ile Ser Arg Ile Phe Leu Ile Trp Ile Ile Ile Thr Asp	
50 55 60	
gga ttt ata cag ata ttc tct cca aat ata tat gcc tcc ggt aac cta	240
Gly Phe Ile Gln Ile Phe Ser Pro Asn Ile Tyr Ala Ser Gly Asn Leu	
65 70 75 80	
att gaa tat att agt tac ttt tgg gta att ggt aat caa tca agt atg	288
Ile Glu Tyr Ile Ser Tyr Phe Trp Val Ile Gly Asn Gln Ser Ser Met	
85 90 95	
tgg ttt gcc acc agc ctc agc atc ttc tat ttc ctg aag ata gca aat	336
Trp Phe Ala Thr Ser Leu Ser Ile Phe Tyr Phe Leu Lys Ile Ala Asn	
100 105 110	
ttt tcc aac tac ata ttt ctc tgg ttg aag agc aga aca aat atg gtt	384
Phe Ser Asn Tyr Ile Phe Leu Trp Leu Lys Ser Arg Thr Asn Met Val	
115 120 125	
ctt ccc ttc atg ata gta ttc tta ctt att tca tcg tta ctt aat ttt	432
Leu Pro Phe Met Ile Val Phe Leu Leu Ile Ser Ser Leu Leu Asn Phe	
130 135 140	
gca tac att gcg aag att ctt aat gat tat aaa ayg aag aat gac aca	480
Ala Tyr Ile Ala Lys Ile Leu Asn Asp Tyr Lys Xaa Lys Asn Asp Thr	
145 150 155 160	
gtc tgg gat ctc aac atg tat aaa agt gaa tac ttt att ama cag att	528
Val Trp Asp Leu Asn Met Tyr Lys Ser Glu Tyr Phe Ile Xaa Gln Ile	
165 170 175	
ttg cta aat ctg gga gtc att ttc ttc ttt aca ctr tcc cta att aca	576
Leu Leu Asn Leu Gly Val Ile Phe Phe Phe Thr Xaa Ser Leu Ile Thr	

180	185	190	
tgt att ttt tta atc att tcc ctt	tgg aga cac aac agg	cag atg caa	624
Cys Ile Phe Leu Ile Ile Ser Leu	Trp Arg His Asn Arg	Gln Met Gln	
195	200	205	
tcr aat gtg aca gga ttg aga gac	tcc aac aca gaa gct cat	gtg aag	672
Xaa Asn Val Thr Gly Leu Arg Asp	Ser Asn Thr Glu Ala His	Val Lys	
210	215	220	
gca atg aaa gtt ttg ata tct ttc	atc atc ctc ttt atc ttg	tat ttt	720
Ala Met Lys Val Leu Ile Ser Phe	Ile Ile Leu Phe Ile Leu	Tyr Phe	
225	230	235	240
ata ggc atg gcc ata gaa ata tca	tgt ttt act gtg cga gaa aac	aaa	768
Ile Gly Met Ala Ile Glu Ile Ser	Cys Phe Thr Val Arg Glu Asn	Lys	
245	250	255	
ctg ctg ctt atg ttt gga atg aca	acc aca gcc atc tat ccc	tgg ggt	816
Leu Leu Leu Met Phe Gly Met Thr	Thr Thr Ala Ile Tyr Pro	Trp Gly	
260	265	270	
cac tca ttt atc tta att cta gga	aac agc aag cta aag caa gcc	tct	864
His Ser Phe Ile Leu Ile Leu Gly	Asn Ser Lys Leu Lys Gln Ala	Ser	
275	280	285	
ttg agg gta ctg cag caa ttg aag	tgc tgt gag aaa agg aaa aat	ctc	912
Leu Arg Val Leu Gln Gln Leu Lys	Cys Cys Glu Lys Arg Lys Asn	Leu	
290	295	300	
aga gtc aca tag			924
Arg Val Thr			
305			

<210> 16  
 <211> 307  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (40)..(40)  
 <223> The 'Xaa' at location 40 stands for Leu.

<220>  
 <221> misc\_feature  
 <222> (156)..(156)  
 <223> The 'Xaa' at location 156 stands for Thr, or Met.

<220>  
 <221> misc\_feature  
 <222> (174)..(174)  
 <223> The 'Xaa' at location 174 stands for Lys, or Thr.

<220>  
 <221> misc\_feature  
 <222> (188)..(188)  
 <223> The 'Xaa' at location 188 stands for Leu.

<220>

<221> misc\_feature  
 <222> (209)..(209)  
 <223> The 'Xaa' at location 209 stands for Ser.

<400> 16

Met Leu Arg Val Val Glu Gly Ile Phe Ile Phe Val Val Val Ser Glu  
 1 5 10 15

Ser Val Phe Gly Val Leu Gly Asn Gly Phe Ile Gly Leu Val Asn Cys  
 20 25 30

Ile Asp Cys Ala Lys Asn Lys Xaa Ser Thr Ile Gly Phe Ile Leu Thr  
 35 40 45

Gly Leu Ala Ile Ser Arg Ile Phe Leu Ile Trp Ile Ile Ile Thr Asp  
 50 55 60

Gly Phe Ile Gln Ile Phe Ser Pro Asn Ile Tyr Ala Ser Gly Asn Leu  
 65 70 75 80

Ile Glu Tyr Ile Ser Tyr Phe Trp Val Ile Gly Asn Gln Ser Ser Met  
 85 90 95

Trp Phe Ala Thr Ser Leu Ser Ile Phe Tyr Phe Leu Lys Ile Ala Asn  
 100 105 110

Phe Ser Asn Tyr Ile Phe Leu Trp Leu Lys Ser Arg Thr Asn Met Val  
 115 120 125

Leu Pro Phe Met Ile Val Phe Leu Leu Ile Ser Ser Leu Leu Asn Phe  
 130 135 140

Ala Tyr Ile Ala Lys Ile Leu Asn Asp Tyr Lys Xaa Lys Asn Asp Thr  
 145 150 155 160

Val Trp Asp Leu Asn Met Tyr Lys Ser Glu Tyr Phe Ile Xaa Gln Ile  
 165 170 175

Leu Leu Asn Leu Gly Val Ile Phe Phe Phe Thr Xaa Ser Leu Ile Thr  
 180 185 190

Cys Ile Phe Leu Ile Ile Ser Leu Trp Arg His Asn Arg Gln Met Gln  
 195 200 205

Xaa Asn Val Thr Gly Leu Arg Asp Ser Asn Thr Glu Ala His Val Lys  
 210 215 220



Ala Met Lys Val Leu Ile Ser Phe Ile Ile Leu Phe Ile Leu Tyr Phe  
 225 230 235 240

Ile Gly Met Ala Ile Glu Ile Ser Cys Phe Thr Val Arg Glu Asn Lys  
 245 250 255

Leu Leu Leu Met Phe Gly Met Thr Thr Thr Ala Ile Tyr Pro Trp Gly  
 260 265 270

His Ser Phe Ile Leu Ile Leu Gly Asn Ser Lys Leu Lys Gln Ala Ser  
 275 280 285

Leu Arg Val Leu Gln Gln Leu Lys Cys Cys Glu Lys Arg Lys Asn Leu  
 290 295 300

Arg Val Thr  
 305

<210> 17  
 <211> 912  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(912)

<220>  
 <221> variation  
 <222> (776)..(776)  
 <223> r is a or g

<400> 17  
 atg gaa agt gcc ctg ccg agt atc ttc act ctt gta ata att gca gaa 48  
 Met Glu Ser Ala Leu Pro Ser Ile Phe Thr Leu Val Ile Ile Ala Glu  
 1 5 10 15  
 ttc ata att ggg aat ttg agc aat gga ttt ata gta ctg atc aac tgc 96  
 Phe Ile Ile Gly Asn Leu Ser Asn Gly Phe Ile Val Leu Ile Asn Cys  
 20 25 30  
 att gac tgg gtc agt aaa aga gag ctg tcc tca gtc gat aaa ctc ctc 144  
 Ile Asp Trp Val Ser Lys Arg Glu Leu Ser Ser Val Asp Lys Leu Leu  
 35 40 45  
 att atc ttg gca atc tcc aga att ggg ctg atc tgg gaa ata tta gta 192  
 Ile Ile Leu Ala Ile Ser Arg Ile Gly Leu Ile Trp Glu Ile Leu Val  
 50 55 60  
 agt tgg ttt tta gct ctg cat tat cta gcc ata ttt gtg tct gga aca 240  
 Ser Trp Phe Leu Ala Leu His Tyr Leu Ala Ile Phe Val Ser Gly Thr  
 65 70 75 80

gga tta aga att atg att ttt agc tgg ata gtt tct aat cac ttc aat 288  
 Gly Leu Arg Ile Met Ile Phe Ser Trp Ile Val Ser Asn His Phe Asn  
 85 90 95  
 ctc tgg ctt gct aca atc ttc agc atc ttt tat ttg ctc aaa ata gcg 336  
 Leu Trp Leu Ala Thr Ile Phe Ser Ile Phe Tyr Leu Leu Lys Ile Ala  
 100 105 110  
 agt ttc tct agc cct gct ttt ctc tat ttg aag tgg aga gta aac aaa 384  
 Ser Phe Ser Ser Pro Ala Phe Leu Tyr Leu Lys Trp Arg Val Asn Lys  
 115 120 125  
 gtg att ctg atg ata ctg cta gga acc ttg gtc ttc tta ttt tta aat 432  
 Val Ile Leu Met Ile Leu Leu Gly Thr Leu Val Phe Leu Phe Leu Asn  
 130 135 140  
 ctg ata caa ata aac atg cat ata aaa gac tgg ctg gac cga tat gaa 480  
 Leu Ile Gln Ile Asn Met His Ile Lys Asp Trp Leu Asp Arg Tyr Glu  
 145 150 155 160  
 aga aac aca act tgg aat ttc agt atg agt gac ttt gaa aca ttt tca 528  
 Arg Asn Thr Thr Trp Asn Phe Ser Met Ser Asp Phe Glu Thr Phe Ser  
 165 170 175  
 gtg tgc gtc aaa ttc act atg act atg ttc agt cta aca cca ttt act 576  
 Val Ser Val Lys Phe Thr Met Thr Met Phe Ser Leu Thr Pro Phe Thr  
 180 185 190  
 gtg gcc ttc atc tct ttt ctc ctg tta att ttc tcc ctg cag aaa cat 624  
 Val Ala Phe Ile Ser Phe Leu Leu Leu Ile Phe Ser Leu Gln Lys His  
 195 200 205  
 ctc cag aaa atg caa ctc aat tac aaa gga cac aga gac ccc agg acc 672  
 Leu Gln Lys Met Gln Leu Asn Tyr Lys Gly His Arg Asp Pro Arg Thr  
 210 215 220  
 aag gtc cat aca aat gcc ttg aaa att gtg atc tca ttc ctt tta ttc 720  
 Lys Val His Thr Asn Ala Leu Lys Ile Val Ile Ser Phe Leu Leu Phe  
 225 230 235 240  
 tat gct agt ttc ttt cta tgt gtt ctc ata tca tgg att tct gag ctg 768  
 Tyr Ala Ser Phe Phe Leu Cys Val Leu Ile Ser Trp Ile Ser Glu Leu  
 245 250 255  
 tat cag arc aca gtg atc tac atg ctt tgt gag acg att gga gtc ttc 816  
 Tyr Gln Xaa Thr Val Ile Tyr Met Leu Cys Glu Thr Ile Gly Val Phe  
 260 265 270  
 tct cct tca agc cac tcc ttt ctt ctg att cta gga aac gct aag tta 864  
 Ser Pro Ser Ser His Ser Phe Leu Leu Ile Leu Gly Asn Ala Lys Leu  
 275 280 285  
 aga cag gcc ttt ctt ttg gtg gca gct aag gta tgg gct aaa cga tga 912  
 Arg Gln Ala Phe Leu Leu Val Ala Ala Lys Val Trp Ala Lys Arg  
 290 295 300

<210> 18  
 <211> 303  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (259)..(259)  
 <223> The 'Xaa' at location 259 stands for Ser, or Asn.

<400> 18

Met Glu Ser Ala Leu Pro Ser Ile Phe Thr Leu Val Ile Ile Ala Glu  
 1 5 10 15

Phe Ile Ile Gly Asn Leu Ser Asn Gly Phe Ile Val Leu Ile Asn Cys  
 20 25 30

Ile Asp Trp Val Ser Lys Arg Glu Leu Ser Ser Val Asp Lys Leu Leu  
 35 40 45

Ile Ile Leu Ala Ile Ser Arg Ile Gly Leu Ile Trp Glu Ile Leu Val  
 50 55 60

Ser Trp Phe Leu Ala Leu His Tyr Leu Ala Ile Phe Val Ser Gly Thr  
 65 70 75 80

Gly Leu Arg Ile Met Ile Phe Ser Trp Ile Val Ser Asn His Phe Asn  
 85 90 95

Leu Trp Leu Ala Thr Ile Phe Ser Ile Phe Tyr Leu Leu Lys Ile Ala  
 100 105 110

Ser Phe Ser Ser Pro Ala Phe Leu Tyr Leu Lys Trp Arg Val Asn Lys  
 115 120 125

Val Ile Leu Met Ile Leu Leu Gly Thr Leu Val Phe Leu Phe Leu Asn  
 130 135 140

Leu Ile Gln Ile Asn Met His Ile Lys Asp Trp Leu Asp Arg Tyr Glu  
 145 150 155 160

Arg Asn Thr Thr Trp Asn Phe Ser Met Ser Asp Phe Glu Thr Phe Ser  
 165 170 175

Val Ser Val Lys Phe Thr Met Thr Met Phe Ser Leu Thr Pro Phe Thr  
 180 185 190

Val Ala Phe Ile Ser Phe Leu Leu Leu Ile Phe Ser Leu Gln Lys His  
 195 200 205

Leu Gln Lys Met Gln Leu Asn Tyr Lys Gly His Arg Asp Pro Arg Thr

210

215

220

Lys Val His Thr Asn Ala Leu Lys Ile Val Ile Ser Phe Leu Leu Phe  
 225 230 235 240

Tyr Ala Ser Phe Phe Leu Cys Val Leu Ile Ser Trp Ile Ser Glu Leu  
 245 250 255

Tyr Gln Xaa Thr Val Ile Tyr Met Leu Cys Glu Thr Ile Gly Val Phe  
 260 265 270

Ser Pro Ser Ser His Ser Phe Leu Leu Ile Leu Gly Asn Ala Lys Leu  
 275 280 285

Arg Gln Ala Phe Leu Leu Val Ala Ala Lys Val Trp Ala Lys Arg  
 290 295 300

<210> 19  
 <211> 954  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(954)

<220>  
 <221> variation  
 <222> (256)..(256)  
 <223> r is a or g

<400> 19  
 atg ggt ggt gtc ata aag agc ata ttt aca ttc gtt tta att gtg gaa 48  
 Met Gly Gly Val Ile Lys Ser Ile Phe Thr Phe Val Leu Ile Val Glu  
 1 5 10 15  
 ttt ata att gga aat tta gga aat agt ttc ata gca ctg gtg aac tgt 96  
 Phe Ile Ile Gly Asn Leu Gly Asn Ser Phe Ile Ala Leu Val Asn Cys  
 20 25 30  
 att gac tgg gtc aag gga aga aag atc tct tcg gtt gat cgg atc ctc 144  
 Ile Asp Trp Val Lys Gly Arg Lys Ile Ser Ser Val Asp Arg Ile Leu  
 35 40 45  
 act gct ttg gca atc tct cga att agc ctg gtt tgg tta ata ttc gga 192  
 Thr Ala Leu Ala Ile Ser Arg Ile Ser Leu Val Trp Leu Ile Phe Gly  
 50 55 60  
 agc tgg tgt gtg tct gtg ttt ttc cca gct tta ttt gcc act gaa aaa 240  
 Ser Trp Cys Val Ser Val Phe Phe Pro Ala Leu Phe Ala Thr Glu Lys  
 65 70 75 80  
 atg ttc aga atg ctt rct aat atc tgg aca gtg atc aat cat ttt agt 288  
 Met Phe Arg Met Leu Xaa Asn Ile Trp Thr Val Ile Asn His Phe Ser

85								90				95					
gtc	tgg	tta	gct	aca	ggc	ctc	ggg	act	ttt	tat	ttt	ctc	aag	ata	gcc	336	
Val	Trp	Leu	Ala	Thr	Gly	Leu	Gly	Thr	Phe	Tyr	Phe	Leu	Lys	Ile	Ala		
			100					105					110				
aat	ttt	tct	aac	tct	att	ttt	ctc	tac	cta	aag	tgg	agr	gtt	aaa	aag	384	
Asn	Phe	Ser	Asn	Ser	Ile	Phe	Leu	Tyr	Leu	Lys	Trp	Arg	Val	Lys	Lys		
		115					120					125					
gtg	ggt	ttg	gtg	ctg	ctt	ctt	gtg	act	tcg	gtc	ttc	ttg	ttt	tta	aat	432	
Val	Val	Leu	Val	Leu	Leu	Leu	Val	Thr	Ser	Val	Phe	Leu	Phe	Leu	Asn		
		130					135				140						
att	gca	ctg	ata	aac	atc	cat	ata	aat	gcc	agt	atc	aat	gga	tac	aga	480	
Ile	Ala	Leu	Ile	Asn	Ile	His	Ile	Asn	Ala	Ser	Ile	Asn	Gly	Tyr	Arg		
					150					155					160		
aga	aac	aag	act	tgc	agt	tct	gat	tca	agt	aac	ttt	aca	cga	ttt	tcc	528	
Arg	Asn	Lys	Thr	Cys	Ser	Ser	Asp	Ser	Ser	Asn	Phe	Thr	Arg	Phe	Ser		
				165					170					175			
agt	ctt	att	gta	tta	acc	agc	act	gtg	ttc	att	ttc	ata	ccc	ttt	act	576	
Ser	Leu	Ile	Val	Leu	Thr	Ser	Thr	Val	Phe	Ile	Phe	Ile	Pro	Phe	Thr		
			180					185					190				
ttg	tcc	ctg	gca	atg	ttt	ctt	ctc	ctc	atc	ttc	tcc	atg	tgg	aaa	cat	624	
Leu	Ser	Leu	Ala	Met	Phe	Leu	Leu	Leu	Ile	Phe	Ser	Met	Trp	Lys	His		
		195					200					205					
cgc	aag	aag	atg	cag	cac	act	gtc	aaa	ata	tcc	gga	gac	gcc	agc	acc	672	
Arg	Lys	Lys	Met	Gln	His	Thr	Val	Lys	Ile	Ser	Gly	Asp	Ala	Ser	Thr		
		210				215					220						
aaa	gcc	cac	aga	gga	ggt	aaa	agt	gtg	atc	act	ttc	ttc	cta	ctc	tat	720	
Lys	Ala	His	Arg	Gly	Val	Lys	Ser	Val	Ile	Thr	Phe	Phe	Leu	Leu	Tyr		
					230					235					240		
gcc	att	ttc	tct	ctg	tct	ttt	ttc	ata	tca	ggt	tgg	acc	tct	gaa	agg	768	
Ala	Ile	Phe	Ser	Leu	Ser	Phe	Phe	Ile	Ser	Val	Trp	Thr	Ser	Glu	Arg		
				245					250					255			
ttg	gag	gaa	aat	cta	att	att	ctt	tcc	cag	gtg	atg	gga	atg	gct	tat	816	
Leu	Glu	Glu	Asn	Leu	Ile	Ile	Leu	Ser	Gln	Val	Met	Gly	Met	Ala	Tyr		
			260					265					270				
cct	tca	tgt	cac	tca	tgt	gtt	ctg	att	ctt	gga	aac	aag	aag	ctg	aga	864	
Pro	Ser	Cys	His	Ser	Cys	Val	Leu	Ile	Leu	Gly	Asn	Lys	Lys	Leu	Arg		
		275					280					285					
cag	gcc	tct	ctg	tca	gtg	cta	ctg	tgg	ctg	agg	tac	atg	ttc	aaa	gat	912	
Gln	Ala	Ser	Leu	Ser	Val	Leu	Leu	Trp	Leu	Arg	Tyr	Met	Phe	Lys	Asp		
						295					300						
ggg	gag	ccc	tca	ggt	cac	aaa	gaa	ttt	aga	gaa	tca	tct	tga			954	
Gly	Glu	Pro	Ser	Gly	His	Lys	Glu	Phe	Arg	Glu	Ser	Ser					
					310					315							

&lt;210&gt; 20

&lt;211&gt; 317

<212> PRT  
 <213> Homo sapiens

<220>

<221> misc\_feature

<222> (86)..(86)

<223> The 'Xaa' at location 86 stands for Ala, or Thr.

<400> 20

Met Gly Gly Val Ile Lys Ser Ile Phe Thr Phe Val Leu Ile Val Glu  
 1 5 10 15

Phe Ile Ile Gly Asn Leu Gly Asn Ser Phe Ile Ala Leu Val Asn Cys  
 20 25 30

Ile Asp Trp Val Lys Gly Arg Lys Ile Ser Ser Val Asp Arg Ile Leu  
 35 40 45

Thr Ala Leu Ala Ile Ser Arg Ile Ser Leu Val Trp Leu Ile Phe Gly  
 50 55 60

Ser Trp Cys Val Ser Val Phe Phe Pro Ala Leu Phe Ala Thr Glu Lys  
 65 70 75 80

Met Phe Arg Met Leu Xaa Asn Ile Trp Thr Val Ile Asn His Phe Ser  
 85 90 95

Val Trp Leu Ala Thr Gly Leu Gly Thr Phe Tyr Phe Leu Lys Ile Ala  
 100 105 110

Asn Phe Ser Asn Ser Ile Phe Leu Tyr Leu Lys Trp Arg Val Lys Lys  
 115 120 125

Val Val Leu Val Leu Leu Leu Val Thr Ser Val Phe Leu Phe Leu Asn  
 130 135 140

Ile Ala Leu Ile Asn Ile His Ile Asn Ala Ser Ile Asn Gly Tyr Arg  
 145 150 155 160

Arg Asn Lys Thr Cys Ser Ser Asp Ser Ser Asn Phe Thr Arg Phe Ser  
 165 170 175

Ser Leu Ile Val Leu Thr Ser Thr Val Phe Ile Phe Ile Pro Phe Thr  
 180 185 190

Leu Ser Leu Ala Met Phe Leu Leu Leu Ile Phe Ser Met Trp Lys His  
 195 200 205

Arg Lys Lys Met Gln His Thr Val Lys Ile Ser Gly Asp Ala Ser Thr  
210 215 220

Lys Ala His Arg Gly Val Lys Ser Val Ile Thr Phe Phe Leu Leu Tyr  
225 230 235 240

Ala Ile Phe Ser Leu Ser Phe Phe, Ile Ser Val Trp Thr Ser Glu Arg  
245 250 255

Leu Glu Glu Asn Leu Ile Ile Leu Ser Gln Val Met Gly Met Ala Tyr  
260 265 270

Pro Ser Cys His Ser Cys Val Leu Ile Leu Gly Asn Lys Lys Leu Arg  
275 280 285

Gln Ala Ser Leu Ser Val Leu Leu Trp Leu Arg Tyr Met Phe Lys Asp  
290 295 300

Gly Glu Pro Ser Gly His Lys Glu Phe Arg Glu Ser Ser  
305 310 315

<210> 21  
<211> 876  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (1)..(876)

<220>  
<221> variation  
<222> (300)..(300)  
<223> y is t or c

<220>  
<221> variation  
<222> (301)..(301)  
<223> r is a or g

<220>  
<221> variation  
<222> (462)..(462)  
<223> y is t or c

<220>  
<221> variation  
<222> (516)..(516)  
<223> k is g or t

<220>  
<221> variation

&lt;222&gt; (665)..(665)

&lt;223&gt; r is a or g

&lt;220&gt;

&lt;221&gt; variation

&lt;222&gt; (846)..(846)

&lt;223&gt; r is a or g

&lt;400&gt; 21

atg ata ccc atc caa ctc act gtc ttc ttc atg atc atc tat gtg ctt	48
Met Ile Pro Ile Gln Leu Thr Val Phe Phe Met Ile Ile Tyr Val Leu	
1 5 10 15	
gag tcc ttg aca att att gtg cag agc agc cta att gtt gca gtg ctg	96
Glu Ser Leu Thr Ile Ile Val Gln Ser Ser Leu Ile Val Ala Val Leu	
20 25 30	
ggc aga gaa tgg ctg caa gtc aga agg ctg atg cct gtg gac atg att	144
Gly Arg Glu Trp Leu Gln Val Arg Arg Leu Met Pro Val Asp Met Ile	
35 40 45	
ctc atc agc ctg ggc atc tct cgc ttc tgt cta cag tgg gca tca atg	192
Leu Ile Ser Leu Gly Ile Ser Arg Phe Cys Leu Gln Trp Ala Ser Met	
50 55 60	
ctg aac aat ttt tgc tcc tat ttt aat ttg aat tat gta ctt tgc aac	240
Leu Asn Asn Phe Cys Ser Tyr Phe Asn Leu Asn Tyr Val Leu Cys Asn	
65 70 75 80	
tta aca atc acc tgg gaa ttt ttt aat atc ctt aca ttc tgg tta aac	288
Leu Thr Ile Thr Trp Glu Phe Phe Asn Ile Leu Thr Phe Trp Leu Asn	
85 90 95	
agc ttg ctt acy rts ttc tac tgc atc aag gtc tct tct ttc acc cat	336
Ser Leu Leu Xaa Xaa Phe Tyr Cys Ile Lys Val Ser Ser Phe Thr His	
100 105 110	
cac atc ttt ctc tgg ctg agg tgg aga att ttg agg ttg ttt ccc tgg	384
His Ile Phe Leu Trp Leu Arg Trp Arg Ile Leu Arg Leu Phe Pro Trp	
115 120 125	
ata tta ctg ggt tct ctg atg att act tgt gta aca atc atc cct tca	432
Ile Leu Leu Gly Ser Leu Met Ile Thr Cys Val Thr Ile Ile Pro Ser	
130 135 140	
gct att ggg aat tac att caa att cag yta ctc acc atg gag cat cta	480
Ala Ile Gly Asn Tyr Ile Gln Ile Gln Xaa Leu Thr Met Glu His Leu	
145 150 155 160	
cca aga aac agc act gta act gac aaa ctt gaa aak ttt cat cag tat	528
Pro Arg Asn Ser Thr Val Thr Asp Lys Leu Glu Xaa Phe His Gln Tyr	
165 170 175	
cag ttc cag gct cat aca gtt gca ttg gtt att cct ttc atc ctg ttc	576
Gln Phe Gln Ala His Thr Val Ala Leu Val Ile Pro Phe Ile Leu Phe	
180 185 190	
ctg gcc tcc acc atc ttt ctc atg gca tca ctg acc aag cag ata caa	624
Leu Ala Ser Thr Ile Phe Leu Met Ala Ser Leu Thr Lys Gln Ile Gln	
195 200 205	



cat cat agc act ggt cac tgc aat cca agc atg aaa gcg crc ttc act	672
His His Ser Thr Gly His Cys Asn Pro Ser Met Lys Ala Xaa Phe Thr	
210 215 220	
gcc ctg agg tcc ctt gcc gtc tta ttt att gtg ttt acc tct tac ttt	720
Ala Leu Arg Ser Leu Ala Val Leu Phe Ile Val Phe Thr Ser Tyr Phe	
225 230 235 240	
cta acc ata ctc atc acc att ata ggt act cta ttt gat aag aga tgt	768
Leu Thr Ile Leu Ile Thr Ile Ile Gly Thr Leu Phe Asp Lys Arg Cys	
245 250 255	
tgg tta tgg gtc tgg gaa gct ttt gtc tat gct ttc atc tta atg cat	816
Trp Leu Trp Val Trp Glu Ala Phe Val Tyr Ala Phe Ile Leu Met His	
260 265 270	
tcc act tca ctg atg ctg agc agc cct acr ttg aaa agg att cta aag	864
Ser Thr Ser Leu Met Leu Ser Ser Pro Xaa Leu Lys Arg Ile Leu Lys	
275 280 285	
gga aag tgc tag	876
Gly Lys Cys	
290	

<210> 22  
 <211> 291  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (100)..(100)  
 <223> The 'Xaa' at location 100 stands for Thr.

<220>  
 <221> misc\_feature  
 <222> (101)..(101)  
 <223> The 'Xaa' at location 101 stands for Val, Met, or Ile.

<220>  
 <221> misc\_feature  
 <222> (154)..(154)  
 <223> The 'Xaa' at location 154 stands for Leu.

<220>  
 <221> misc\_feature  
 <222> (172)..(172)  
 <223> The 'Xaa' at location 172 stands for Lys, or Asn.

<220>  
 <221> misc\_feature  
 <222> (222)..(222)  
 <223> The 'Xaa' at location 222 stands for Arg, or His.

<220>  
 <221> misc\_feature  
 <222> (282)..(282)  
 <223> The 'Xaa' at location 282 stands for Thr.

<400> 22

Met Ile Pro Ile Gln Leu Thr Val Phe Phe Met Ile Ile Tyr Val Leu  
 1 5 10 15  
 Glu Ser Leu Thr Ile Ile Val Gln Ser Ser Leu Ile Val Ala Val Leu  
 20 25 30  
 Gly Arg Glu Trp Leu Gln Val Arg Arg Leu Met Pro Val Asp Met Ile  
 35 40 45  
 Leu Ile Ser Leu Gly Ile Ser Arg Phe Cys Leu Gln Trp Ala Ser Met  
 50 55 60  
 Leu Asn Asn Phe Cys Ser Tyr Phe Asn Leu Asn Tyr Val Leu Cys Asn  
 65 70 75 80  
 Leu Thr Ile Thr Trp Glu Phe Phe Asn Ile Leu Thr Phe Trp Leu Asn  
 85 90 95  
 Ser Leu Leu Xaa Xaa Phe Tyr Cys Ile Lys Val Ser Ser Phe Thr His  
 100 105 110  
 His Ile Phe Leu Trp Leu Arg Trp Arg Ile Leu Arg Leu Phe Pro Trp  
 115 120 125  
 Ile Leu Leu Gly Ser Leu Met Ile Thr Cys Val Thr Ile Ile Pro Ser  
 130 135 140  
 Ala Ile Gly Asn Tyr Ile Gln Ile Gln Xaa Leu Thr Met Glu His Leu  
 145 150 155 160  
 Pro Arg Asn Ser Thr Val Thr Asp Lys Leu Glu Xaa Phe His Gln Tyr  
 165 170 175  
 Gln Phe Gln Ala His Thr Val Ala Leu Val Ile Pro Phe Ile Leu Phe  
 180 185 190  
 Leu Ala Ser Thr Ile Phe Leu Met Ala Ser Leu Thr Lys Gln Ile Gln  
 195 200 205  
 His His Ser Thr Gly His Cys Asn Pro Ser Met Lys Ala Xaa Phe Thr  
 210 215 220  
 Ala Leu Arg Ser Leu Ala Val Leu Phe Ile Val Phe Thr Ser Tyr Phe  
 225 230 235 240

Ser Thr Ser Leu Met Leu Ser Ser Pro Xaa Leu Lys Arg Ile Leu Lys  
275 280 285

aat gcc ttc gtt ttc ttg gtg aat ttt tgg gat gta gtg aag agg cag 144

Asn	Ala	Phe	Val	Phe	Leu	Val	Asn	Phe	Trp	Asp	Val	Val	Lys	Arg	Gln	
	35						40					45				
sca	ctg	agc	aac	agt	gat	tgt	gtg	ctg	ctg	tgt	ctc	agc	atc	agc	cgg	192
Xaa	Leu	Ser	Asn	Ser	Asp	Cys	Val	Leu	Leu	Cys	Leu	Ser	Ile	Ser	Arg	
	50					55					60					
ctt	ttc	ctg	cat	gga	ctg	ctg	ttc	ctg	agt	gct	atc	cag	ctt	acc	crc	240
Leu	Phe	Leu	His	Gly	Leu	Leu	Phe	Leu	Ser	Ala	Ile	Gln	Leu	Thr	Xaa	
	65				70					75					80	
ttc	cag	aag	ttg	agt	gaa	cca	ctg	aac	cac	agc	tac	caa	gcc	atc	atc	288
Phe	Gln	Lys	Leu	Ser	Glu	Pro	Leu	Asn	His	Ser	Tyr	Gln	Ala	Ile	Ile	
				85					90					95		
atg	cta	tgg	atg	att	gca	aac	caa	gcc	aac	ctc	tgg	ctt	gct	gcc	tgc	336
Met	Leu	Trp	Met	Ile	Ala	Asn	Gln	Ala	Asn	Leu	Trp	Leu	Ala	Ala	Cys	
				100				105					110			
ctc	agc	ctg	ctt	tac	tgc	tcc	aag	ctc	atc	cgt	ttc	tct	cac	acc	ttc	384
Leu	Ser	Leu	Leu	Tyr	Cys	Ser	Lys	Leu	Ile	Arg	Phe	Ser	His	Thr	Phe	
		115					120					125				
ctg	atc	tgc	ttg	gca	agc	tgg	gtc	tcc	agg	aag	atc	tcc	cag	atg	ctc	432
Leu	Ile	Cys	Leu	Ala	Ser	Trp	Val	Ser	Arg	Lys	Ile	Ser	Gln	Met	Leu	
	130					135					140					
ctg	ggt	att	att	ctt	tgc	tcc	tgc	atc	tgc	act	gtc	ctc	tgt	gtt	tgg	480
Leu	Gly	Ile	Ile	Leu	Cys	Ser	Cys	Ile	Cys	Thr	Val	Leu	Cys	Val	Trp	
	145				150				155					160		
tgc	ttt	ttt	agc	aga	cct	cac	ttc	aca	gtc	aca	act	gtg	cta	ttc	atg	528
Cys	Phe	Phe	Ser	Arg	Pro	His	Phe	Thr	Val	Thr	Thr	Val	Leu	Phe	Met	
				165					170					175		
aat	aac	aat	aca	agg	ctc	aac	tgg	cag	aat	aaa	gat	ctc	aat	tta	ttt	576
Asn	Asn	Asn	Thr	Arg	Leu	Asn	Trp	Gln	Asn	Lys	Asp	Leu	Asn	Leu	Phe	
			180					185					190			
tat	tcc	ttt	ctc	ttc	tgc	tat	ctg	tgg	tct	gtg	cct	cct	ttc	cta	ttg	624
Tyr	Ser	Phe	Leu	Phe	Cys	Tyr	Leu	Trp	Ser	Val	Pro	Pro	Phe	Leu	Leu	
		195					200					205				
ttt	ctg	gtt	tct	tct	ggg	atg	ctg	act	gtc	tcc	ctg	gga	agg	cac	atg	672
Phe	Leu	Val	Ser	Ser	Gly	Met	Leu	Thr	Val	Ser	Leu	Gly	Arg	His	Met	
	210					215					220					
agg	aca	atg	aag	gtc	tat	acc	aga	aac	tct	cgt	gac	ccc	agc	ctg	gag	720
Arg	Thr	Met	Lys	Val	Tyr	Thr	Arg	Asn	Ser	Arg	Asp	Pro	Ser	Leu	Glu	
	225				230					235					240	
gcc	cac	att	aaa	gcc	ctc	aag	tct	ctt	gtc	tcc	ttt	ttc	tgc	ttc	ttt	768
Ala	His	Ile	Lys	Ala	Leu	Lys	Ser	Leu	Val	Ser	Phe	Phe	Cys	Phe	Phe	
				245					250					255		
gtg	ata	tca	tcc	tgt	gyt	gcc	ttc	atc	tct	gtg	ccc	cta	ctg	att	ctg	816
Val	Ile	Ser	Ser	Cys	Xaa	Ala	Phe	Ile	Ser	Val	Pro	Leu	Leu	Ile	Leu	
			260					265					270			
tgg	ygc	gac	aaa	ata	ggg	gtg	atg	gtt	tgt	gtt	ggg	ata	atg	gca	gct	864
Trp	Xaa	Asp	Lys	Ile	Gly	Val	Met	Val	Cys	Val	Gly	Ile	Met	Ala	Ala	

275	280	285	
tgt ccc tct ggg cat gca gcc	rtc ctg atc tca ggc aat gcc aag ttg		912
Cys Pro Ser Gly His Ala Ala	Xaa Leu Ile Ser Gly Asn Ala Lys Leu		
290	295 300		
agg aga gct gtg atg acc att	ctg ctc tgg gct cag agc agc ctg aag		960
Arg Arg Ala Val Met Thr Ile	Leu Leu Trp Ala Gln Ser Ser Leu Lys		
305	310 315 320		
gta aga gcc gac cac aag gca gat	tcc cgg aca ctg tgc tga		1002
Val Arg Ala Asp His Lys Ala	Asp Ser Arg Thr Leu Cys		
	325 330		

<210> 24  
 <211> 333  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (49)..(49)  
 <223> The 'Xaa' at location 49 stands for Ala, or Pro.

<220>  
 <221> misc\_feature  
 <222> (80)..(80)  
 <223> The 'Xaa' at location 80 stands for Arg, or His.

<220>  
 <221> misc\_feature  
 <222> (262)..(262)  
 <223> The 'Xaa' at location 262 stands for Ala, or Val.

<220>  
 <221> misc\_feature  
 <222> (274)..(274)  
 <223> The 'Xaa' at location 274 stands for Arg, or Cys.

<220>  
 <221> misc\_feature  
 <222> (296)..(296)  
 <223> The 'Xaa' at location 296 stands for Val, or Ile.

<400> 24

Met	Leu	Thr	Leu	Thr	Arg	Ile	Arg	Thr	Val	Ser	Tyr	Glu	Val	Arg	Ser
1				5				10						15	

Thr	Phe	Leu	Phe	Ile	Ser	Val	Leu	Glu	Phe	Ala	Val	Gly	Phe	Leu	Thr
		20						25					30		

Asn	Ala	Phe	Val	Phe	Leu	Val	Asn	Phe	Trp	Asp	Val	Val	Lys	Arg	Gln
	35						40					45			

Xaa	Leu	Ser	Asn	Ser	Asp	Cys	Val	Leu	Leu	Cys	Leu	Ser	Ile	Ser	Arg
50						55					60				

Leu Phe Leu His Gly Leu Leu Phe Leu Ser Ala Ile Gln Leu Thr Xaa  
 65 70 75 80

Phe Gln Lys Leu Ser Glu Pro Leu Asn His Ser Tyr Gln Ala Ile Ile  
 85 90 95

Met Leu Trp Met Ile Ala Asn Gln Ala Asn Leu Trp Leu Ala Ala Cys  
 100 105 110

Leu Ser Leu Leu Tyr Cys Ser Lys Leu Ile Arg Phe Ser His Thr Phe  
 115 120 125

Leu Ile Cys Leu Ala Ser Trp Val Ser Arg Lys Ile Ser Gln Met Leu  
 130 135 140

Leu Gly Ile Ile Leu Cys Ser Cys Ile Cys Thr Val Leu Cys Val Trp  
 145 150 155 160

Cys Phe Phe Ser Arg Pro His Phe Thr Val Thr Thr Val Leu Phe Met  
 165 170 175

Asn Asn Asn Thr Arg Leu Asn Trp Gln Asn Lys Asp Leu Asn Leu Phe  
 180 185 190

Tyr Ser Phe Leu Phe Cys Tyr Leu Trp Ser Val Pro Pro Phe Leu Leu  
 195 200 205

Phe Leu Val Ser Ser Gly Met Leu Thr Val Ser Leu Gly Arg His Met  
 210 215 220

Arg Thr Met Lys Val Tyr Thr Arg Asn Ser Arg Asp Pro Ser Leu Glu  
 225 230 235 240

Ala His Ile Lys Ala Leu Lys Ser Leu Val Ser Phe Phe Cys Phe Phe  
 245 250 255

Val Ile Ser Ser Cys Xaa Ala Phe Ile Ser Val Pro Leu Leu Ile Leu  
 260 265 270

Trp Xaa Asp Lys Ile Gly Val Met Val Cys Val Gly Ile Met Ala Ala  
 275 280 285

Cys Pro Ser Gly His Ala Ala Xaa Leu Ile Ser Gly Asn Ala Lys Leu  
 290 295 300

Arg Arg Ala Val Met Thr Ile Leu Leu Trp Ala Gln Ser Ser Leu Lys  
 305 310 315 320

Val Arg Ala Asp His Lys Ala Asp Ser Arg Thr Leu Cys  
 325 330

<210> 25  
 <211> 1014  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(1014)

<220>  
 <221> variation  
 <222> (578)..(578)  
 <223> y is t or c

<220>  
 <221> variation  
 <222> (589)..(589)  
 <223> r is a or g

<400> 25  
 atg cta ggg aga tgt ttt cct cca gac acc aaa gag aag caa cag ctc 48  
 Met Leu Gly Arg Cys Phe Pro Pro Asp Thr Lys Glu Lys Gln Gln Leu  
 1 5 10 15  
 aga atg act aaa ctc tgc gat cct gca gaa agt gaa ttg tcg cca ttt 96  
 Arg Met Thr Lys Leu Cys Asp Pro Ala Glu Ser Glu Leu Ser Pro Phe  
 20 25 30  
 ctc atc acc tta att tta gca gtt tta ctt gct gaa tac ctc att ggt 144  
 Leu Ile Thr Leu Ile Leu Ala Val Leu Leu Ala Glu Tyr Leu Ile Gly  
 35 40 45  
 atc att gca aat ggt ttc atc atg gct ata cat gca gct gaa tgg gtt 192  
 Ile Ile Ala Asn Gly Phe Ile Met Ala Ile His Ala Ala Glu Trp Val  
 50 55 60  
 caa aat aag gca gtt tcc aca agt ggc agg atc ctg gtt ttc ctg agt 240  
 Gln Asn Lys Ala Val Ser Thr Ser Gly Arg Ile Leu Val Phe Leu Ser  
 65 70 75 80  
 gta tcc aga ata gct ctc caa agc ctc atg atg tta gaa att acc atc 288  
 Val Ser Arg Ile Ala Leu Gln Ser Leu Met Met Leu Glu Ile Thr Ile  
 85 90 95  
 agc tca acc tcc cta agt ttt tat tct gaa gac gct gta tat tat gca 336  
 Ser Ser Thr Ser Leu Ser Phe Tyr Ser Glu Asp Ala Val Tyr Tyr Ala  
 100 105 110  
 ttc aaa ata agt ttt ata ttc tta aat ttt tgt agc ctg tgg ttt gct 384  
 Phe Lys Ile Ser Phe Ile Phe Leu Asn Phe Cys Ser Leu Trp Phe Ala  
 115 120 125

gcc tgg ctc agt ttc ttc tac ttt gtg aag att gcc aat ttc tcc tac 432  
 Ala Trp Leu Ser Phe Phe Tyr Phe Val Lys Ile Ala Asn Phe Ser Tyr  
 130 135 140

ccc ctt ttc ctc aaa ctg agg tgg aga att act gga ttg ata ccc tgg 480  
 Pro Leu Phe Leu Lys Leu Arg Trp Arg Ile Thr Gly Leu Ile Pro Trp  
 145 150 155 160

ctt ctg tgg ctg tcc gtg ttt att tcc ttc agt cac agc atg ttc tgc 528  
 Leu Leu Trp Leu Ser Val Phe Ile Ser Phe Ser His Ser Met Phe Cys  
 165 170 175

atc aac atc tgc act gtg tat tgt aac aat tct ttc cct atc cac tcc 576  
 Ile Asn Ile Cys Thr Val Tyr Cys Asn Asn Ser Phe Pro Ile His Ser  
 180 185 190

tyc aac tcc act rag aaa aca tac ttg tct gag atc aat gtg gtc ggt 624  
 Xaa Asn Ser Thr Xaa Lys Thr Tyr Leu Ser Glu Ile Asn Val Val Gly  
 195 200 205

ctg gct ttt ttc ttt aac ctg ggg att gtg act cct ctg atc atg ttc 672  
 Leu Ala Phe Phe Phe Asn Leu Gly Ile Val Thr Pro Leu Ile Met Phe  
 210 215 220

atc ctg aca gcc acc ctg ctg atc ctc tct ctc aag aga cac acc cta 720  
 Ile Leu Thr Ala Thr Leu Leu Ile Leu Ser Leu Lys Arg His Thr Leu  
 225 230 235 240

cac atg gga agc aat gcc aca ggg tcc aac gac ccc agc atg gag gct 768  
 His Met Gly Ser Asn Ala Thr Gly Ser Asn Asp Pro Ser Met Glu Ala  
 245 250 255

cac atg ggg gcc atc aaa gct atc agc tac ttt ctc att ctc tac att 816  
 His Met Gly Ala Ile Lys Ala Ile Ser Tyr Phe Leu Ile Leu Tyr Ile  
 260 265 270

ttc aat gca gtt gct ctg ttt atc tac ctg tcc aac atg ttt gac atc 864  
 Phe Asn Ala Val Ala Leu Phe Ile Tyr Leu Ser Asn Met Phe Asp Ile  
 275 280 285

aac agt ctg tgg aat aat ttg tgc cag atc atc atg gct gcc tac cct 912  
 Asn Ser Leu Trp Asn Asn Leu Cys Gln Ile Ile Met Ala Ala Tyr Pro  
 290 295 300

gcc agc cac tca att cta ctg att caa gat aac cct ggg ctg aga aga 960  
 Ala Ser His Ser Ile Leu Leu Ile Gln Asp Asn Pro Gly Leu Arg Arg  
 305 310 315 320

gcc tgg agc ggc ttc agc ttc gac ttc atc ttt acc caa aag agt gga 1008  
 Ala Trp Ser Gly Phe Ser Phe Asp Phe Ile Phe Thr Gln Lys Ser Gly  
 325 330 335

ctc tga  
 Leu 1014

<210> 26  
 <211> 337  
 <212> PRT



<213> Homo sapiens

<220>

<221> misc\_feature

<222> (193)..(193)

<223> The 'Xaa' at location 193 stands for Ser, or Phe.

<220>

<221> misc\_feature

<222> (197)..(197)

<223> The 'Xaa' at location 197 stands for Glu, or Lys.

<400> 26

Met Leu Gly Arg Cys Phe Pro Pro Asp Thr Lys Glu Lys Gln Gln Leu  
1 5 10 15

Arg Met Thr Lys Leu Cys Asp Pro Ala Glu Ser Glu Leu Ser Pro Phe  
20 25 30

Leu Ile Thr Leu Ile Leu Ala Val Leu Leu Ala Glu Tyr Leu Ile Gly  
35 40 45

Ile Ile Ala Asn Gly Phe Ile Met Ala Ile His Ala Ala Glu Trp Val  
50 55 60

Gln Asn Lys Ala Val Ser Thr Ser Gly Arg Ile Leu Val Phe Leu Ser  
65 70 75 80

Val Ser Arg Ile Ala Leu Gln Ser Leu Met Met Leu Glu Ile Thr Ile  
85 90 95

Ser Ser Thr Ser Leu Ser Phe Tyr Ser Glu Asp Ala Val Tyr Tyr Ala  
100 105 110

Phe Lys Ile Ser Phe Ile Phe Leu Asn Phe Cys Ser Leu Trp Phe Ala  
115 120 125

Ala Trp Leu Ser Phe Phe Tyr Phe Val Lys Ile Ala Asn Phe Ser Tyr  
130 135 140

Pro Leu Phe Leu Lys Leu Arg Trp Arg Ile Thr Gly Leu Ile Pro Trp  
145 150 155 160

Leu Leu Trp Leu Ser Val Phe Ile Ser Phe Ser His Ser Met Phe Cys  
165 170 175

Ile Asn Ile Cys Thr Val Tyr Cys Asn Asn Ser Phe Pro Ile His Ser  
180 185 190

Xaa Asn Ser Thr Xaa Lys Thr Tyr Leu Ser Glu Ile Asn Val Val Gly  
 195 200 205

Leu Ala Phe Phe Phe Asn Leu Gly Ile Val Thr Pro Leu Ile Met Phe  
 210 215 220

Ile Leu Thr Ala Thr Leu Leu Ile Leu Ser Leu Lys Arg His Thr Leu  
 225 230 235 240

His Met Gly Ser Asn Ala Thr Gly Ser Asn Asp Pro Ser Met Glu Ala  
 245 250 255

His Met Gly Ala Ile Lys Ala Ile Ser Tyr Phe Leu Ile Leu Tyr Ile  
 260 265 270

Phe Asn Ala Val Ala Leu Phe Ile Tyr Leu Ser Asn Met Phe Asp Ile  
 275 280 285

Asn Ser Leu Trp Asn Asn Leu Cys Gln Ile Ile Met Ala Ala Tyr Pro  
 290 295 300

Ala Ser His Ser Ile Leu Leu Ile Gln Asp Asn Pro Gly Leu Arg Arg  
 305 310 315 320

Ala Trp Ser Gly Phe Ser Phe Asp Phe Ile Phe Thr Gln Lys Ser Gly  
 325 330 335

Leu

<210> 27  
 <211> 972  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(972)

<220>  
 <221> variation  
 <222> (560)..(560)  
 <223> m is a or c

<220>  
 <221> variation  
 <222> (817)..(817)  
 <223> r is a or g

<400> 27		
atg gca acg gtg aac aca gat gcc aca gat aaa gac ata tcc aag ttc		48
Met Ala Thr Val Asn Thr Asp Ala Thr Asp Lys Asp Ile Ser Lys Phe		
1 5 10 15		
aag gtc acc ttc act ttg gtg gtc tcc gga ata gag tgc atc act ggc		96
Lys Val Thr Phe Thr Leu Val Val Ser Gly Ile Glu Cys Ile Thr Gly		
20 25 30		
atc ctt ggg agt ggc ttc atc acg gcc atc tat ggg gct gag tgg gcc		144
Ile Leu Gly Ser Gly Phe Ile Thr Ala Ile Tyr Gly Ala Glu Trp Ala		
35 40 45		
agg ggc aaa aca ctc ccc act ggt gac cgc att atg ttg atg ctg agc		192
Arg Gly Lys Thr Leu Pro Thr Gly Asp Arg Ile Met Leu Met Leu Ser		
50 55 60		
ttt tcc agg ctc ttg cta cag att tgg atg atg ctg gag aac att ttc		240
Phe Ser Arg Leu Leu Leu Gln Ile Trp Met Met Leu Glu Asn Ile Phe		
65 70 75 80		
agt ctg cta ttc cga att gtt tat aac caa aac tca gtg tat atc ctc		288
Ser Leu Leu Phe Arg Ile Val Tyr Asn Gln Asn Ser Val Tyr Ile Leu		
85 90 95		
ttc aaa gtc atc act gtc ttt ctg aac cat tcc aat ctc tgg ttt gct		336
Phe Lys Val Ile Thr Val Phe Leu Asn His Ser Asn Leu Trp Phe Ala		
100 105 110		
gcc tgg ctc aaa gtc ttc tat tgt ctt aga att gca aac ttc aat cat		384
Ala Trp Leu Lys Val Phe Tyr Cys Leu Arg Ile Ala Asn Phe Asn His		
115 120 125		
cct ttg ttc ttc ctg atg aag agg aaa atc ata gtg ctg atg cct tgg		432
Pro Leu Phe Phe Leu Met Lys Arg Lys Ile Ile Val Leu Met Pro Trp		
130 135 140		
ctt ctc agg ctg tca gtg ttg gtt tcc tta agc ttc agc ttt cct ctc		480
Leu Leu Arg Leu Ser Val Leu Val Ser Leu Ser Phe Ser Phe Pro Leu		
145 150 155 160		
tcg aga gat gtc ttc aat gtg tat gtg aat agc tcc att cct atc ccc		528
Ser Arg Asp Val Phe Asn Val Tyr Val Asn Ser Ser Ile Pro Ile Pro		
165 170 175		
tcc tcc aac tcc acg gag aag aag tac ttc tmt gag acc aat atg gtc		576
Ser Ser Asn Ser Thr Glu Lys Lys Tyr Phe Xaa Glu Thr Asn Met Val		
180 185 190		
aac ctg gta ttt ttc tat aac atg ggg atc ttc gtt cct ctg atc atg		624
Asn Leu Val Phe Phe Tyr Asn Met Gly Ile Phe Val Pro Leu Ile Met		
195 200 205		
ttc atc ctg gca gcc acc ctg ctg atc ctc tct ctc aag aga cac acc		672
Phe Ile Leu Ala Ala Thr Leu Leu Ile Leu Ser Leu Lys Arg His Thr		
210 215 220		
cta cac atg gga agc aat gcc aca ggg tcc agg gac ccc agc atg aag		720
Leu His Met Gly Ser Asn Ala Thr Gly Ser Arg Asp Pro Ser Met Lys		
225 230 235 240		

Phe Ser Arg Leu Leu Leu Gln Ile Trp Met Met Leu Glu Asn Ile Phe  
65 70 75 80

Ser Leu Leu Phe Arg Ile Val Tyr Asn Gln Asn Ser Val Tyr Ile Leu  
 85 90 95

Phe Lys Val Ile Thr Val Phe Leu Asn His Ser Asn Leu Trp Phe Ala  
 100 105 110

Ala Trp Leu Lys Val Phe Tyr Cys Leu Arg Ile Ala Asn Phe Asn His  
 115 120 125

Pro Leu Phe Phe Leu Met Lys Arg Lys Ile Ile Val Leu Met Pro Trp  
 130 135 140

Leu Leu Arg Leu Ser Val Leu Val Ser Leu Ser Phe Ser Phe Pro Leu  
 145 150 155 160

Ser Arg Asp Val Phe Asn Val Tyr Val Asn Ser Ser Ile Pro Ile Pro  
 165 170 175

Ser Ser Asn Ser Thr Glu Lys Lys Tyr Phe Xaa Glu Thr Asn Met Val  
 180 185 190

Asn Leu Val Phe Phe Tyr Asn Met Gly Ile Phe Val Pro Leu Ile Met  
 195 200 205

Phe Ile Leu Ala Ala Thr Leu Leu Ile Leu Ser Leu Lys Arg His Thr  
 210 215 220

Leu His Met Gly Ser Asn Ala Thr Gly Ser Arg Asp Pro Ser Met Lys  
 225 230 235 240

Ala His Ile Gly Ala Ile Lys Ala Thr Ser Tyr Phe Leu Ile Leu Tyr  
 245 250 255

Ile Phe Asn Ala Ile Ala Leu Phe Leu Ser Thr Ser Asn Ile Phe Asp  
 260 265 270

Xaa Tyr Ser Ser Trp Asn Ile Leu Cys Lys Ile Ile Met Ala Ala Tyr  
 275 280 285

Pro Ala Gly His Ser Val Gln Leu Ile Leu Gly Asn Pro Gly Leu Arg  
 290 295 300

Arg Ala Trp Lys Arg Phe Gln His Gln Val Pro Leu Tyr Leu Lys Gly  
 305 310 315 320

Gln Thr Leu

<210> 29  
 <211> 924  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(924)

<220>  
 <221> variation  
 <222> (189)..(189)  
 <223> r is a or g

<220>  
 <221> variation  
 <222> (380)..(380)  
 <223> y is t or c

<220>  
 <221> variation  
 <222> (584)..(584)  
 <223> w is a or t

<400> 29  
 atg caa gca gca ctg acg gcc ttc ttc gtg ttg ctc ttt agc ctg ctg 48  
 Met Gln Ala Ala Leu Thr Ala Phe Phe Val Leu Leu Phe Ser Leu Leu  
 1 5 10 15  
 agt ctt ctg ggg att gca gcg aat ggc ttc att gtg ctg gtg ctg ggc 96  
 Ser Leu Leu Gly Ile Ala Ala Asn Gly Phe Ile Val Leu Val Leu Gly  
 20 25 30  
 agg gag tgg ctg cga tat ggc agg ttg ctg ccc ttg gat atg atc ctc 144  
 Arg Glu Trp Leu Arg Tyr Gly Arg Leu Leu Pro Leu Asp Met Ile Leu  
 35 40 45  
 att agc ttg ggt gcc tcc cgc ttc tgc ctg cag ttg gtt ggg acr gtg 192  
 Ile Ser Leu Gly Ala Ser Arg Phe Cys Leu Gln Leu Val Gly Xaa Val  
 50 55 60  
 cac aac ttc tac tac tct gcc cag aag gtc gag tac tct ggg ggt ctc 240  
 His Asn Phe Tyr Tyr Ser Ala Gln Lys Val Glu Tyr Ser Gly Gly Leu  
 65 70 75 80  
 ggc cga cag ttc ttc cat cta cac tgg cac ttc ctg aac tca gcc acc 288  
 Gly Arg Gln Phe Phe His Leu His Trp His Phe Leu Asn Ser Ala Thr  
 85 90 95  
 ttc tgg ttt tgc agc tgg ctc agt gtc ctg ttc tgt gtg aag att gct 336  
 Phe Trp Phe Cys Ser Trp Leu Ser Val Leu Phe Cys Val Lys Ile Ala  
 100 105 110  
 aac atc aca cac tcc acc ttc ctg tgg ctg aag tgg agg ttc cya ggg 384  
 Asn Ile Thr His Ser Thr Phe Leu Trp Leu Lys Trp Arg Phe Xaa Gly  
 115 120 125

tgg gtg ccc tgg ctc ctg ttg ggc tct gtc ctg atc tcc ttc atc ata 432  
 Trp Val Pro Trp Leu Leu Leu Gly Ser Val Leu Ile Ser Phe Ile Ile  
 130 135 140

acc ctg ctg ttt ttt tgg gtg aac tac cct gta tat caa gaa ttt tta 480  
 Thr Leu Leu Phe Phe Trp Val Asn Tyr Pro Val Tyr Gln Glu Phe Leu  
 145 150 155 160

att aga aaa ttt tct ggg aac atg acc tac aag tgg aat aca agg ata 528  
 Ile Arg Lys Phe Ser Gly Asn Met Thr Tyr Lys Trp Asn Thr Arg Ile  
 165 170 175

gaa aca tac tat ttc cca tcc ctg aaa ctg gtc atc tgg tca att cct 576  
 Glu Thr Tyr Tyr Phe Pro Ser Leu Lys Leu Val Ile Trp Ser Ile Pro  
 180 185 190

ttt tct gwt ttt ctg gtc tca att atg ctg tta att aat tct ctg agg 624  
 Phe Ser Xaa Phe Leu Val Ser Ile Met Leu Leu Ile Asn Ser Leu Arg  
 195 200 205

agg cat act cag aga atg cag cac aac ggg cac agc ctg cag gac ccc 672  
 Arg His Thr Gln Arg Met Gln His Asn Gly His Ser Leu Gln Asp Pro  
 210 215 220

agc acc cag gct cac acc aga gct ctg aag tcc ctc atc tcc ttc ctc 720  
 Ser Thr Gln Ala His Thr Arg Ala Leu Lys Ser Leu Ile Ser Phe Leu  
 225 230 235 240

att ctt tat gct ctg tcc ttt ctg tcc ctg atc att gat gcc gca aaa 768  
 Ile Leu Tyr Ala Leu Ser Phe Leu Ser Leu Ile Ile Asp Ala Ala Lys  
 245 250 255

ttt atc tcc atg cag aac gac ttt tac tgg cca tgg caa att gca gtc 816  
 Phe Ile Ser Met Gln Asn Asp Phe Tyr Trp Pro Trp Gln Ile Ala Val  
 260 265 270

tac ctg tgc ata tct gtc cat ccc ttc atc ctc atc ttc agc aac ctc 864  
 Tyr Leu Cys Ile Ser Val His Pro Phe Ile Leu Ile Phe Ser Asn Leu  
 275 280 285

aag ctt cga agc gtg ttc tca cag ctc ctg ttg ttg gca agg ggc ttc 912  
 Lys Leu Arg Ser Val Phe Ser Gln Leu Leu Leu Leu Ala Arg Gly Phe  
 290 295 300

tgg gtg gcc tga  
 Trp Val Ala 924  
 305

<210> 30  
 <211> 307  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (63)..(63)  
 <223> The 'Xaa' at location 63 stands for Thr.  
 <220>

<221> misc\_feature  
 <222> (127)..(127)  
 <223> The 'Xaa' at location 127 stands for Pro, or Leu.

<220>  
 <221> misc\_feature  
 <222> (195)..(195)  
 <223> The 'Xaa' at location 195 stands for Asp, or Val.

<400> 30

Met Gln Ala Ala Leu Thr Ala Phe Phe Val Leu Leu Phe Ser Leu Leu  
 1 5 10 15

Ser Leu Leu Gly Ile Ala Ala Asn Gly Phe Ile Val Leu Val Leu Gly  
 20 25 30

Arg Glu Trp Leu Arg Tyr Gly Arg Leu Leu Pro Leu Asp Met Ile Leu  
 35 40 45

Ile Ser Leu Gly Ala Ser Arg Phe Cys Leu Gln Leu Val Gly Xaa Val  
 50 55 60

His Asn Phe Tyr Tyr Ser Ala Gln Lys Val Glu Tyr Ser Gly Gly Leu  
 65 70 75 80

Gly Arg Gln Phe Phe His Leu His Trp His Phe Leu Asn Ser Ala Thr  
 85 90 95

Phe Trp Phe Cys Ser Trp Leu Ser Val Leu Phe Cys Val Lys Ile Ala  
 100 105 110

Asn Ile Thr His Ser Thr Phe Leu Trp Leu Lys Trp Arg Phe Xaa Gly  
 115 120 125

Trp Val Pro Trp Leu Leu Leu Gly Ser Val Leu Ile Ser Phe Ile Ile  
 130 135 140

Thr Leu Leu Phe Phe Trp Val Asn Tyr Pro Val Tyr Gln Glu Phe Leu  
 145 150 155 160

Ile Arg Lys Phe Ser Gly Asn Met Thr Tyr Lys Trp Asn Thr Arg Ile  
 165 170 175

Glu Thr Tyr Tyr Phe Pro Ser Leu Lys Leu Val Ile Trp Ser Ile Pro  
 180 185 190

Phe Ser Xaa Phe Leu Val Ser Ile Met Leu Leu Ile Asn Ser Leu Arg  
 195 200 205



Arg His Thr Gln Arg Met Gln His Asn Gly His Ser Leu Gln Asp Pro  
 210 215 220

Ser Thr Gln Ala His Thr Arg Ala Leu Lys Ser Leu Ile Ser Phe Leu  
 225 230 235 240

Ile Leu Tyr Ala Leu Ser Phe Leu Ser Leu Ile Ile Asp Ala Ala Lys  
 245 250 255

Phe Ile Ser Met Gln Asn Asp Phe Tyr Trp Pro Trp Gln Ile Ala Val  
 260 265 270

Tyr Leu Cys Ile Ser Val His Pro Phe Ile Leu Ile Phe Ser Asn Leu  
 275 280 285

Lys Leu Arg Ser Val Phe Ser Gln Leu Leu Leu Leu Ala Arg Gly Phe  
 290 295 300

Trp Val Ala  
 305

<210> 31  
 <211> 930  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(930)

<220>  
 <221> variation  
 <222> (104)..(104)  
 <223> s is g or c

<220>  
 <221> variation  
 <222> (270)..(270)  
 <223> r is a or g

<220>  
 <221> variation  
 <222> (460)..(460)  
 <223> s is g or c

<220>  
 <221> variation  
 <222> (510)..(510)  
 <223> k is t or g

<220>

<221> variation  
 <222> (599)..(599)  
 <223> k i s t o r g

<220>  
 <221> variation  
 <222> (635)..(635)  
 <223> r i s a o r g

<220>  
 <221> variation  
 <222> (663)..(663)  
 <223> s i s g o r c

<220>  
 <221> variation  
 <222> (882)..(882)  
 <223> k i s t o r g

<220>  
 <221> variation  
 <222> (883)..(883)  
 <223> y i s t o r c

<220>  
 <221> variation  
 <222> (889)..(889)  
 <223> r i s a o r g

<400> 31

atg ata act ttt cta ccc atc att ttt tcc agt ctg gta gtg gtt aca	48
Met Ile Thr Phe Leu Pro Ile Ile Phe Ser Ser Leu Val Val Val Thr	
1 5 10 15	
ttt gtt att gga aat ttt gct aat ggc ttc ata gca ctg gta aat tcc	96
Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser	
20 25 30	
att gag tsg ttc aag aga caa aag atc tcc ttt gct gac caa att ctc	144
Ile Glu Xaa Phe Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu	
35 40 45	
act gct ctg gcg gtc tcc aga gtt ggt ttg ctc tgg gta tta tta tta	192
Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu	
50 55 60	
aac tgg tat tca act gtg ttg aat cca gct ttt aat agt gta gaa gta	240
Asn Trp Tyr Ser Thr Val Leu Asn Pro Ala Phe Asn Ser Val Glu Val	
65 70 75 80	
aga act act gct tat aat atc tgg gca gtr atc aac cat ttc agc aac	288
Arg Thr Thr Ala Tyr Asn Ile Trp Ala Xaa Ile Asn His Phe Ser Asn	
85 90 95	
tgg ctt gct act acc ctc agc ata ttt tat ttg ctc aag att gcc aat	336
Trp Leu Ala Thr Thr Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn	
100 105 110	
ttc tcc aac ttt att ttt ctt cac tta aag agg aga gtt aag agt gtc	384
Phe Ser Asn Phe Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val	
115 120 125	

att ctg gtg atg ttg ttg ggg cct ttg cta ttt ttg gct tgt cat ctt 432  
 Ile Leu Val Met Leu Leu Gly Pro Leu Leu Phe Leu Ala Cys His Leu  
 130 135 140

ttt gtg ata aac atg aat gag att gtg sgg aca aaa gaa ttt gaa gga 480  
 Phe Val Ile Asn Met Asn Glu Ile Val Xaa Thr Lys Glu Phe Glu Gly  
 145 150 155 160

aac atg act tgg aag atc aaa ttg aag agk gca atg tac ttt tca aat 528  
 Asn Met Thr Trp Lys Ile Lys Leu Lys Xaa Ala Met Tyr Phe Ser Asn  
 165 170 175

atg act gta acc atg gta gca aac tta gta ccc ttc act ctg acc cta 576  
 Met Thr Val Thr Met Val Ala Asn Leu Val Pro Phe Thr Leu Thr Leu  
 180 185 190

cta tct ttt atg ctg tta atc tkt tct ttg tgt aaa cat ctc aag aag 624  
 Leu Ser Phe Met Leu Leu Ile Xaa Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

atg cag ctc crt ggt aaa gga tct caa gat ccc agc acs aag gtc cac 672  
 Met Gln Leu Xaa Gly Lys Gly Ser Gln Asp Pro Ser Xaa Lys Val His  
 210 215 220

ata aaa gct ttg caa act gtg atc tcc ttc ctc ttg tta tgt gcc att 720  
 Ile Lys Ala Leu Gln Thr Val Ile Ser Phe Leu Leu Leu Cys Ala Ile  
 225 230 235 240

tac ttt ctg tcc ata atg ata tca gtt tgg agt ttt gga agt ctg gaa 768  
 Tyr Phe Leu Ser Ile Met Ile Ser Val Trp Ser Phe Gly Ser Leu Glu  
 245 250 255

aac aaa cct gtc ttc atg ttc tgc aaa gct att aga ttc agc tat cct 816  
 Asn Lys Pro Val Phe Met Phe Cys Lys Ala Ile Arg Phe Ser Tyr Pro  
 260 265 270

tca atc cac cca ttc atc ctg att tgg gga aac aag aag cta aag cag 864  
 Ser Ile His Pro Phe Ile Leu Ile Trp Gly Asn Lys Lys Leu Lys Gln  
 275 280 285

act ttt ctt tca gtt ttk ygg caa rtg agg tac tgg gtg aaa gga gag 912  
 Thr Phe Leu Ser Val Xaa Xaa Gln Xaa Arg Tyr Trp Val Lys Gly Glu  
 290 295 300

aag act tca tct cca tga 930  
 Lys Thr Ser Ser Pro  
 305

&lt;210&gt; 32

&lt;211&gt; 309

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (35)..(35)

&lt;223&gt; The 'Xaa' at location 35 stands for Trp, or Ser.

&lt;220&gt;

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<221> misc_feature
<222> (90)..(90)
<223> The 'Xaa' at location 90 stands for Val.

<220>
<221> misc_feature
<222> (154)..(154)
<223> The 'Xaa' at location 154 stands for Gly, or Arg.

<220>
<221> misc_feature
<222> (170)..(170)
<223> The 'Xaa' at location 170 stands for Arg, or Ser.

<220>
<221> misc_feature
<222> (200)..(200)
<223> The 'Xaa' at location 200 stands for Cys, or Phe.

<220>
<221> misc_feature
<222> (212)..(212)
<223> The 'Xaa' at location 212 stands for Arg, or His.

<220>
<221> misc_feature
<222> (221)..(221)
<223> The 'Xaa' at location 221 stands for Thr.

<220>
<221> misc_feature
<222> (294)..(294)
<223> The 'Xaa' at location 294 stands for Leu, or Phe.

<220>
<221> misc_feature
<222> (295)..(295)
<223> The 'Xaa' at location 295 stands for Arg, or Trp.

<220>
<221> misc_feature
<222> (297)..(297)
<223> The 'Xaa' at location 297 stands for Val, or Met.

<400> 32

Met Ile Thr Phe Leu Pro Ile Ile Phe Ser Ser Leu Val Val Val Thr
1           5           10           15

Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser
20           25           30

Ile Glu Xaa Phe Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu
35           40           45

Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu
50           55           60

```

Asn Trp Tyr Ser Thr Val Leu Asn Pro Ala Phe Asn Ser Val Glu Val  
 65 70 75 80  
 Arg Thr Thr Ala Tyr Asn Ile Trp Ala Xaa Ile Asn His Phe Ser Asn  
 85 90 95  
 Trp Leu Ala Thr Thr Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn  
 100 105 110  
 Phe Ser Asn Phe Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val  
 115 120 125  
 Ile Leu Val Met Leu Leu Gly Pro Leu Leu Phe Leu Ala Cys His Leu  
 130 135 140  
 Phe Val Ile Asn Met Asn Glu Ile Val Xaa Thr Lys Glu Phe Glu Gly  
 145 150 155 160  
 Asn Met Thr Trp Lys Ile Lys Leu Lys Xaa Ala Met Tyr Phe Ser Asn  
 165 170 175  
 Met Thr Val Thr Met Val Ala Asn Leu Val Pro Phe Thr Leu Thr Leu  
 180 185 190  
 Leu Ser Phe Met Leu Leu Ile Xaa Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205  
 Met Gln Leu Xaa Gly Lys Gly Ser Gln Asp Pro Ser Xaa Lys Val His  
 210 215 220  
 Ile Lys Ala Leu Gln Thr Val Ile Ser Phe Leu Leu Leu Cys Ala Ile  
 225 230 235 240  
 Tyr Phe Leu Ser Ile Met Ile Ser Val Trp Ser Phe Gly Ser Leu Glu  
 245 250 255  
 Asn Lys Pro Val Phe Met Phe Cys Lys Ala Ile Arg Phe Ser Tyr Pro  
 260 265 270  
 Ser Ile His Pro Phe Ile Leu Ile Trp Gly Asn Lys Lys Leu Lys Gln  
 275 280 285  
 Thr Phe Leu Ser Val Xaa Xaa Gln Xaa Arg Tyr Trp Val Lys Gly Glu  
 290 295 300

Lys Thr Ser Ser Pro  
305

<210> 33  
<211> 930  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (1)..(930)

<220>  
<221> variation  
<222> (103)..(103)  
<223> y is t or c

<220>  
<221> variation  
<222> (484)..(484)  
<223> w is a or t

<220>  
<221> variation  
<222> (599)..(599)  
<223> r is a or g

<220>  
<221> variation  
<222> (649)..(649)  
<223> s is g or c

<220>  
<221> variation  
<222> (680)..(680)  
<223> y is t or c

<220>  
<221> variation  
<222> (718)..(718)  
<223> r is a or g

<220>  
<221> variation  
<222> (744)..(744)  
<223> r is a or g

<220>  
<221> variation  
<222> (827)..(827)  
<223> s is g or c

<220>  
<221> variation  
<222> (843)..(843)  
<223> r is a or g

<400> 33

atg aca act ttt ata ccc atc att ttt tcc agt gtg gta gtg gtt cta

Met 1	Thr	Thr	Phe	Ile 5	Pro	Ile	Ile	Phe	Ser 10	Ser	Val	Val	Val	Val 15	Leu	
ttt Phe	gtt Val	att Ile	gga Gly 20	aat Asn	ttt Phe	gct Ala	aat Asn	ggc Gly 25	ttc Phe	ata Ile	gca Ala	ttg Leu	gta Val	aat Asn	tcc Ser	96
att Ile	gag Glu	ygg Xaa 35	gtc Val	aag Lys	aga Arg	caa Gln	aag Lys 40	atc Ile	tct Ser	ttt Phe	gct Ala	gac Asp 45	cag Gln	att Ile	ctc Leu	144
act Thr 50	gct Ala	ctg Leu	gcg Ala	gtc Val	tcc Ser	aga Arg 55	gtt Val	ggg Gly	ttg Leu	ctc Leu	tgg Trp 60	gta Val	tta Leu	tta Leu	tta Leu	192
aat Asn 65	tgg Trp	tat Tyr	tca Ser	act Thr	gtg Val 70	ttt Phe	aat Asn	cca Pro	gct Ala	ttt Phe 75	tat Tyr	agt Ser	gta Val	gaa Glu	gta Val 80	240
aga Arg	act Thr	act Thr	gct Ala	tat Tyr 85	aat Asn	gtc Val	tgg Trp	gca Ala	gta Val 90	acc Thr	ggc Gly	cat His	ttc Phe	agc Ser 95	aac Asn	288
tgg Trp	ctt Leu	gct Ala	act Thr 100	agc Ser	ctc Leu	agc Ser	ata Ile	ttt Phe 105	tat Tyr	ttg Leu	ctc Leu	aag Lys	att Ile 110	gcc Ala	aat Asn	336
ttc Phe	tcc Ser	aac Asn 115	ctt Leu	att Ile	ttt Phe	ctt Leu	cac His 120	tta Leu	aag Lys	agg Arg	aga Arg	gtt Val 125	aag Lys	agt Ser	gtc Val	384
att Ile 130	ctg Leu	gtg Val	atg Met	ctg Leu	ttg Leu	ggg Gly 135	cct Pro	tta Leu	cta Leu	ttt Phe	ttg Leu 140	gcy Ala	tgt Cys	caa Gln	ctt Leu	432
ttt Phe 145	gtg Val	ata Ile	aac Asn	atg Met	aaa Lys 150	gag Glu	att Ile	gta Val	cgg Arg	aca Thr 155	aaa Lys	gaa Glu	tat Tyr	gaa Glu	gga Gly 160	480
aac Asn	wtg Xaa	act Thr	tgg Trp	aag Lys 165	atc Ile	aaa Lys	ttg Leu	agg Arg	agt Ser 170	gca Ala	gtg Val	tac Tyr	ctt Leu	tca Ser 175	gat Asp	528
gcg Ala	act Thr	gta Val	acc Thr 180	acg Thr	cta Leu	gga Gly	aac Asn	tta Leu 185	gtg Val	ccc Pro	ttc Phe	act Thr	ctg Leu 190	acc Thr	ctg Leu	576
cta Leu	tgt Cys	ttt Phe 195	ttg Leu	ctg Leu	tta Leu	atc Ile	trt Xaa 200	tct Ser	ctg Leu	tgt Cys	aaa Lys	cat His 205	ctc Leu	aag Lys	aag Lys	624
atg Met 210	cag Gln	ctc Leu	cat His	ggg Gly	aaa Lys	gga Gly	tct Ser 215	saa Xaa	gat Asp	ccc Pro	agc Ser 220	acc Thr	aag Lys	gtc Val	cac His	672
ata Ile 225	aaa Lys	gyt Xaa	ttg Leu	caa Gln	act Thr 230	gtg Val	atc Ile	ttt Phe	ttc Phe	ctc Leu 235	ttg Leu	tta Leu	tgt Cys	gcc Ala	rtt Xaa 240	720
tac Tyr	ttt Phe	ctg Leu	tcc Ser	ata Ile	atg Met	ata Ile	tcg Xaa	gtt Val	tgg Trp	agt Ser	ttt Phe	ggg Gly	agt Ser	ctg Leu	gaa Glu	768

	245	250	255	
aac aaa cct gtc ttc atg ttc tgc aaa gct att aga ttc agc tat cct				816
Asn Lys Pro Val Phe Met Phe Cys Lys Ala Ile Arg Phe Ser Tyr Pro				
	260	265	270	
tca atc cac csa ttc atc ctg att tgr gga aac aag aag cta aag cag				864
Ser Ile His Xaa Phe Ile Leu Ile Xaa Gly Asn Lys Lys Leu Lys Gln				
	275	280	285	
act ttt ctt tca gtt ttg cgg caa gtg agg tac tgg gtg aaa gga gag				912
Thr Phe Leu Ser Val Leu Arg Gln Val Arg Tyr Trp Val Lys Gly Glu				
	290	295	300	
aag cct tca tct cca tga				
Lys Pro Ser Ser Pro				930
305				

<210> 34  
 <211> 309  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (35)..(35)  
 <223> The 'Xaa' at location 35 stands for Arg, or Trp.

<220>  
 <221> misc\_feature  
 <222> (162)..(162)  
 <223> The 'Xaa' at location 162 stands for Met, or Leu.

<220>  
 <221> misc\_feature  
 <222> (200)..(200)  
 <223> The 'Xaa' at location 200 stands for Cys, or Tyr.

<220>  
 <221> misc\_feature  
 <222> (217)..(217)  
 <223> The 'Xaa' at location 217 stands for Glu, or Gln.

<220>  
 <221> misc\_feature  
 <222> (227)..(227)  
 <223> The 'Xaa' at location 227 stands for Ala, or Val.

<220>  
 <221> misc\_feature  
 <222> (240)..(240)  
 <223> The 'Xaa' at location 240 stands for Val, or Ile.

<220>  
 <221> misc\_feature  
 <222> (248)..(248)  
 <223> The 'Xaa' at location 248 stands for Ser.

<220>  
 <221> misc\_feature



<222> (276)..(276)

<223> The 'Xaa' at location 276 stands for Arg, or Pro.

<220>

<221> misc\_feature

<222> (281)..(281)

<223> The 'Xaa' at location 281 stands for Trp.

<400> 34

Met Thr Thr Phe Ile Pro Ile Ile Phe Ser Ser Val Val Val Val Leu  
1 5 10 15

Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser  
20 25 30

Ile Glu Xaa Val Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu  
35 40 45

Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu  
50 55 60

Asn Trp Tyr Ser Thr Val Phe Asn Pro Ala Phe Tyr Ser Val Glu Val  
65 70 75 80

Arg Thr Thr Ala Tyr Asn Val Trp Ala Val Thr Gly His Phe Ser Asn  
85 90 95

Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn  
100 105 110

Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val  
115 120 125

Ile Leu Val Met Leu Leu Gly Pro Leu Leu Phe Leu Ala Cys Gln Leu  
130 135 140

Phe Val Ile Asn Met Lys Glu Ile Val Arg Thr Lys Glu Tyr Glu Gly  
145 150 155 160

Asn Xaa Thr Trp Lys Ile Lys Leu Arg Ser Ala Val Tyr Leu Ser Asp  
165 170 175

Ala Thr Val Thr Thr Leu Gly Asn Leu Val Pro Phe Thr Leu Thr Leu  
180 185 190

Leu Cys Phe Leu Leu Leu Ile Xaa Ser Leu Cys Lys His Leu Lys Lys  
195 200 205

Met Gln Leu His Gly Lys Gly Ser Xaa Asp Pro Ser Thr Lys Val His  
 210 215 220

Ile Lys Xaa Leu Gln Thr Val Ile Phe Phe Leu Leu Leu Cys Ala Xaa  
 225 230 235 240

Tyr Phe Leu Ser Ile Met Ile Xaa Val Trp Ser Phe Gly Ser Leu Glu  
 245 250 255

Asn Lys Pro Val Phe Met Phe Cys Lys Ala Ile Arg Phe Ser Tyr Pro  
 260 265 270

Ser Ile His Xaa Phe Ile Leu Ile Xaa Gly Asn Lys Lys Leu Lys Gln  
 275 280 285

Thr Phe Leu Ser Val Leu Arg Gln Val Arg Tyr Trp Val Lys Gly Glu  
 290 295 300

Lys Pro Ser Ser Pro  
 305

<210> 35  
 <211> 900  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(900)

<220>  
 <221> variation  
 <222> (106)..(106)  
 <223> k is g or t

<220>  
 <221> variation  
 <222> (682)..(682)  
 <223> w is a or t

<220>  
 <221> variation  
 <222> (749)..(749)  
 <223> r is a or g

<220>  
 <221> variation  
 <222> (862)..(862)  
 <223> y is c or t

<400> 35  
 atg ata act ttt ctg ccc atc att ttt tcc att cta ata gtg gtt aca

Met	Ile	Thr	Phe	Leu	Pro	Ile	Ile	Phe	Ser	Ile	Leu	Ile	Val	Val	Thr	
1				5					10					15		
ttt	gtg	att	gga	aat	ttt	gct	aat	ggc	ttc	ata	gca	ttg	gta	aat	tcc	96
Phe	Val	Ile	Gly	Asn	Phe	Ala	Asn	Gly	Phe	Ile	Ala	Leu	Val	Asn	Ser	
			20					25				30				
att	gag	tgg	ktt	aag	aga	caa	aag	atc	tct	ttt	gct	gac	caa	att	ctc	144
Ile	Glu	Trp	Xaa	Lys	Arg	Gln	Lys	Ile	Ser	Phe	Ala	Asp	Gln	Ile	Leu	
		35					40					45				
act	gct	ctg	gca	gtc	tcc	aga	ggt	ggt	tta	ctc	tgg	gta	tta	gta	tta	192
Thr	Ala	Leu	Ala	Val	Ser	Arg	Val	Gly	Leu	Leu	Trp	Val	Leu	Val	Leu	
		50				55					60					
aat	tgg	tat	gca	act	gag	ttg	aat	cca	gct	ttt	aac	agt	ata	gaa	gta	240
Asn	Trp	Tyr	Ala	Thr	Glu	Leu	Asn	Pro	Ala	Phe	Asn	Ser	Ile	Glu	Val	
65					70				75					80		
aga	att	act	gct	tac	aat	gtc	tgg	gca	gta	atc	aac	cat	ttc	agc	aac	288
Arg	Ile	Thr	Ala	Tyr	Asn	Val	Trp	Ala	Val	Ile	Asn	His	Phe	Ser	Asn	
				85					90				95			
tgg	ctt	gct	act	agc	ctc	agc	ata	ttt	tat	ttg	ctc	aag	att	gcc	aat	336
Trp	Leu	Ala	Thr	Ser	Leu	Ser	Ile	Phe	Tyr	Leu	Leu	Lys	Ile	Ala	Asn	
			100					105					110			
ttc	tcc	aac	ctt	att	ttt	ctt	cac	tta	aag	agg	aga	ggt	aag	agt	ggt	384
Phe	Ser	Asn	Leu	Ile	Phe	Leu	His	Leu	Lys	Arg	Arg	Val	Lys	Ser	Val	
		115					120					125				
gtt	ctg	gtg	ata	cta	ttg	ggg	cct	ttg	cta	ttt	ttg	ggt	tgt	cat	ctt	432
Val	Leu	Val	Ile	Leu	Leu	Gly	Pro	Leu	Leu	Phe	Leu	Val	Cys	His	Leu	
		130				135					140					
ttt	gtg	ata	aac	atg	aat	cag	att	ata	tgg	aca	aaa	gaa	tat	gaa	gga	480
Phe	Val	Ile	Asn	Met	Asn	Gln	Ile	Ile	Trp	Thr	Lys	Glu	Tyr	Glu	Gly	
145					150				155					160		
aac	atg	act	tgg	aag	atc	aaa	ctg	agg	agt	gca	atg	tac	ctt	tca	aat	528
Asn	Met	Thr	Trp	Lys	Ile	Lys	Leu	Arg	Ser	Ala	Met	Tyr	Leu	Ser	Asn	
				165					170				175			
aca	acg	gta	acc	atc	cta	gca	aac	tta	ggt	ccc	ttc	act	ctg	acc	ctg	576
Thr	Thr	Val	Thr	Ile	Leu	Ala	Asn	Leu	Val	Pro	Phe	Thr	Leu	Thr	Leu	
			180					185					190			
ata	tct	ttt	ctg	ctg	tta	atc	tgt	tct	ctg	tgt	aaa	cat	ctc	aaa	aag	624
Ile	Ser	Phe	Leu	Leu	Leu	Ile	Cys	Ser	Leu	Cys	Lys	His	Leu	Lys	Lys	
		195					200					205				
atg	cag	ctc	cat	ggc	aaa	gga	tct	caa	gat	ccc	agc	atg	aag	gtc	cac	672
Met	Gln	Leu	His	Gly	Lys	Gly	Ser	Gln	Asp	Pro	Ser	Met	Lys	Val	His	
		210				215					220					
ata	aaa	gct	wtg	caa	act	gtg	acc	tcc	ttc	ctc	ttg	tta	tgt	gcc	att	720
Ile	Lys	Ala	Xaa	Gln	Thr	Val	Thr	Ser	Phe	Leu	Leu	Leu	Cys	Ala	Ile	
225					230					235				240		
tac	ttt	ctg	tcc	ata	atc	atg	tca	ggt	trg	agt	ttt	gag	agt	ctg	gaa	768
Tyr	Phe	Leu	Ser	Ile	Ile	Met	Ser	Val	Xaa	Ser	Phe	Glu	Ser	Leu	Glu	

245										250					255					
aac	aaa	cct	gtc	ttc	atg	ttc	tgc	gaa	gct	att	gca	ttc	agc	tat	cct		816			
Asn	Lys	Pro	Val	Phe	Met	Phe	Cys	Glu	Ala	Ile	Ala	Phe	Ser	Tyr	Pro					
			260					265					270							
tca	acc	cac	cca	ttc	atc	ctg	att	tgg	gga	aac	aag	aag	cta	aag	yag		864			
Ser	Thr	His	Pro	Phe	Ile	Leu	Ile	Trp	Gly	Asn	Lys	Lys	Leu	Lys	Xaa					
		275					280					285								
act	ttt	ctt	tca	gtt	ttg	tgg	caa	atg	agg	tac	tga						900			
Thr	Phe	Leu	Ser	Val	Leu	Trp	Gln	Met	Arg	Tyr										
		290				295														

<210> 36  
 <211> 299  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (36)..(36)  
 <223> The 'Xaa' at location 36 stands for Val, or Phe.

<220>  
 <221> misc\_feature  
 <222> (228)..(228)  
 <223> The 'Xaa' at location 228 stands for Met, or Leu.

<220>  
 <221> misc\_feature  
 <222> (250)..(250)  
 <223> The 'Xaa' at location 250 stands for Trp.

<220>  
 <221> misc\_feature  
 <222> (288)..(288)  
 <223> The 'Xaa' at location 288 stands for Gln.

<400> 36

Met Ile Thr Phe Leu Pro Ile Ile Phe Ser Ile Leu Ile Val Val Thr  
 1 5 10 15

Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser  
 20 25 30

Ile Glu Trp Xaa Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu  
 35 40 45

Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Val Leu  
 50 55 60

Asn Trp Tyr Ala Thr Glu Leu Asn Pro Ala Phe Asn Ser Ile Glu Val  
 65 70 75 80

Arg Ile Thr Ala Tyr Asn Val Trp Ala Val Ile Asn His Phe Ser Asn  
                             85                            90                            95  
 Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn  
                             100                            105                            110  
 Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val  
                             115                            120                            125  
 Val Leu Val Ile Leu Leu Gly Pro Leu Leu Phe Leu Val Cys His Leu  
                             130                            135                            140  
 Phe Val Ile Asn Met Asn Gln Ile Ile Trp Thr Lys Glu Tyr Glu Gly  
                             145                            150                            155                            160  
 Asn Met Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr Leu Ser Asn  
                             165                            170                            175  
 Thr Thr Val Thr Ile Leu Ala Asn Leu Val Pro Phe Thr Leu Thr Leu  
                             180                            185                            190  
 Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
                             195                            200                            205  
 Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Met Lys Val His  
                             210                            215                            220  
 Ile Lys Ala Xaa Gln Thr Val Thr Ser Phe Leu Leu Leu Cys Ala Ile  
                             225                            230                            235                            240  
 Tyr Phe Leu Ser Ile Ile Met Ser Val Xaa Ser Phe Glu Ser Leu Glu  
                             245                            250                            255  
 Asn Lys Pro Val Phe Met Phe Cys Glu Ala Ile Ala Phe Ser Tyr Pro  
                             260                            265                            270  
 Ser Thr His Pro Phe Ile Leu Ile Trp Gly Asn Lys Lys Leu Lys Xaa  
                             275                            280                            285  
 Thr Phe Leu Ser Val Leu Trp Gln Met Arg Tyr  
                             290                            295

<210> 37  
 <211> 929  
 <212> DNA  
 <213> Homo sapiens

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)..(927)

&lt;400&gt; 37

atg ata act ttt ctg ccc atc att ttt tcc att cta ata gtg gtt ata	48
Met Ile Thr Phe Leu Pro Ile Ile Phe Ser Ile Leu Ile Val Val Ile	
1 5 10 15	
ttt gtt att gga aat ttt gct aat ggc ttc ata gca ttg gta aat tcc	96
Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser	
20 25 30	
att gag tgg gtc aag aga caa aag atc tcc ttt gtt gac caa att ctc	144
Ile Glu Trp Val Lys Arg Gln Lys Ile Ser Phe Val Asp Gln Ile Leu	
35 40 45	
act gct ctg gcg gtc tcc aga gtt ggt ttg ctc tgg gtg tta tta cta	192
Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu	
50 55 60	
cat tgg tat gca act cag ttg aat cca gct ttt tat agt gta gaa gta	240
His Trp Tyr Ala Thr Gln Leu Asn Pro Ala Phe Tyr Ser Val Glu Val	
65 70 75 80	
aga att act gct tat aat gtc tgg gca gta acc aac cat ttc agc agc	288
Arg Ile Thr Ala Tyr Asn Val Trp Ala Val Thr Asn His Phe Ser Ser	
85 90 95	
tgg ctt gct act agc ctc agc atg ttt tat ttg ctc agg att gcc aat	336
Trp Leu Ala Thr Ser Leu Ser Met Phe Tyr Leu Leu Arg Ile Ala Asn	
100 105 110	
ttc tcc aac ctt att ttt ctt cgc ata aag agg aga gtt aag agt gtt	384
Phe Ser Asn Leu Ile Phe Leu Arg Ile Lys Arg Arg Val Lys Ser Val	
115 120 125	
gtt ctg gtg ata ctg ttg ggg cct ttg cta ttt ttg gtt tgt cat ctt	432
Val Leu Val Ile Leu Leu Gly Pro Leu Leu Phe Leu Val Cys His Leu	
130 135 140	
ttt gtg ata aac atg gat gag act gta tgg aca aaa gaa tat gaa gga	480
Phe Val Ile Asn Met Asp Glu Thr Val Trp Thr Lys Glu Tyr Glu Gly	
145 150 155 160	
aac gtg act tgg aag atc aaa ttg agg agt gca atg tac cat tca aat	528
Asn Val Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr His Ser Asn	
165 170 175	
atg act cta acc atg cta gca aac ttt gta ccc ctc act ctg acc ctg	576
Met Thr Leu Thr Met Leu Ala Asn Phe Val Pro Leu Thr Leu Thr Leu	
180 185 190	
ata tct ttt ctg ctg tta atc tgt tct ctg tgt aaa cat ctc aag aag	624
Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys	
195 200 205	
atg cag ctc cat ggc aaa gga tct caa gat ccc agc acc aag gtc cac	672
Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His	

210	215	220	
ata aaa gct ttg caa act	gtg acc tcc ttt ctt	ctg tta tgt gcc att	720
Ile Lys Ala Leu Gln Thr	Val Thr Ser Phe Leu	Leu Leu Cys Ala Ile	
225	230	235 240	
tac ttt ctg tcc atg atc	ata tca gtt tgt aat	ttt ggg agg ctg gaa	768
Tyr Phe Leu Ser Met Ile	Ile Ser Val Cys Asn	Phe Gly Arg Leu Glu	
245	250	255	
aag caa cct gtc ttc atg	ttc tgc caa gct att	ata ttc agc tat cct	816
Lys Gln Pro Val Phe Met	Phe Cys Gln Ala Ile	Ile Phe Ser Tyr Pro	
260	265	270	
tca acc cac cca ttc atc	ctg att ttg gga aac	aag aag cta aag cag	864
Ser Thr His Pro Phe Ile	Leu Ile Leu Gly Asn	Lys Lys Leu Lys Gln	
275	280	285	
att ttt ctt tca gtt ttg	cgg cat gtg agg tac	tggtgtg aaa gac aga	912
Ile Phe Leu Ser Val Leu	Arg His Val Arg Tyr	Trp Val Lys Asp Arg	
290	295	300	
agc ctt cgt ctc cat ga			929
Ser Leu Arg Leu His			
305			

<210> 38  
 <211> 309  
 <212> PRT  
 <213> Homo sapiens

<400> 38

Met Ile Thr Phe Leu Pro Ile Ile Phe Ser Ile Leu Ile Val Val Ile	1	5	10	15
Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser	20	25	30	
Ile Glu Trp Val Lys Arg Gln Lys Ile Ser Phe Val Asp Gln Ile Leu	35	40	45	
Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu	50	55	60	
His Trp Tyr Ala Thr Gln Leu Asn Pro Ala Phe Tyr Ser Val Glu Val	65	70	75	80
Arg Ile Thr Ala Tyr Asn Val Trp Ala Val Thr Asn His Phe Ser Ser	85	90	95	
Trp Leu Ala Thr Ser Leu Ser Met Phe Tyr Leu Leu Arg Ile Ala Asn	100	105	110	

Phe Ser Asn Leu Ile Phe Leu Arg Ile Lys Arg Arg Val Lys Ser Val  
 115 120 125

Val Leu Val Ile Leu Leu Gly Pro Leu Leu Phe Leu Val Cys His Leu  
 130 135 140

Phe Val Ile Asn Met Asp Glu Thr Val Trp Thr Lys Glu Tyr Glu Gly  
 145 150 155 160

Asn Val Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr His Ser Asn  
 165 170 175

Met Thr Leu Thr Met Leu Ala Asn Phe Val Pro Leu Thr Leu Thr Leu  
 180 185 190

Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His  
 210 215 220

Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Leu Leu Cys Ala Ile  
 225 230 235 240

Tyr Phe Leu Ser Met Ile Ile Ser Val Cys Asn Phe Gly Arg Leu Glu  
 245 250 255

Lys Gln Pro Val Phe Met Phe Cys Gln Ala Ile Ile Phe Ser Tyr Pro  
 260 265 270

Ser Thr His Pro Phe Ile Leu Ile Leu Gly Asn Lys Lys Leu Lys Gln  
 275 280 285

Ile Phe Leu Ser Val Leu Arg His Val Arg Tyr Trp Val Lys Asp Arg  
 290 295 300

Ser Leu Arg Leu His  
 305

<210> 39  
 <211> 900  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS



<222> (1)..(900)

<220>

<221> variation

<222> (94)..(94)

<223> r is a or g

<220>

<221> variation

<222> (326)..(326)

<223> m is a or c

<220>

<221> variation

<222> (418)..(418)

<223> y is t or c

<220>

<221> variation

<222> (456)..(456)

<223> w is a or t

<220>

<221> variation

<222> (673)..(673)

<223> r is a or g

<220>

<221> variation

<222> (719)..(719)

<223> y is t or c

<220>

<221> variation

<222> (799)..(799)

<223> s is g or c

<220>

<221> variation

<222> (883)..(883)

<223> r is a or g

<220>

<221> variation

<222> (895)..(895)

<223> y is t or c

<400> 39

atg	atg	tgt	ttt	ctg	ctc	atc	att	tca	tca	att	ctg	gta	gtg	ttt	gca	48
Met	Met	Cys	Phe	Leu	Leu	Ile	Ile	Ser	Ser	Ile	Leu	Val	Val	Phe	Ala	
1				5				10					15			

ttt	gtt	ctt	gga	aat	gtt	gcc	aat	ggc	ttc	ata	gcy	cta	gta	aat	rtc	96
Phe	Val	Leu	Gly	Asn	Val	Ala	Asn	Gly	Phe	Ile	Ala	Leu	Val	Asn	Xaa	
			20					25					30			

att	gac	tgg	gtt	aac	aca	cga	aag	atc	tcc	tca	gct	gag	caa	att	ctc	144
Ile	Asp	Trp	Val	Asn	Thr	Arg	Lys	Ile	Ser	Ser	Ala	Glu	Gln	Ile	Leu	
		35					40					45				

act	gct	ctg	gtg	gtc	tcc	aga	att	ggg	tta	ctc	tgg	gtc	atg	tta	ttc	192
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Thr	Ala	Leu	Val	Val	Ser	Arg	Ile	Gly	Leu	Leu	Trp	Val	Met	Leu	Phe		
50						55					60						
ctt	tgg	tat	gca	act	gtg	ttt	aat	tct	gct	tta	tat	ggt	tta	gaa	gta		240
Leu	Trp	Tyr	Ala	Thr	Val	Phe	Asn	Ser	Ala	Leu	Tyr	Gly	Leu	Glu	Val		
65					70				75					80			
aga	att	gtt	gct	tct	aat	gcc	tgg	gct	gta	acg	aac	cat	ttc	agc	atg		288
Arg	Ile	Val	Ala	Ser	Asn	Ala	Trp	Ala	Val	Thr	Asn	His	Phe	Ser	Met		
				85				90					95				
tgg	ctt	gct	gct	agc	ctc	agc	ata	ttt	tgt	ttg	ctc	amg	att	gcc	aat		336
Trp	Leu	Ala	Ala	Ser	Leu	Ser	Ile	Phe	Cys	Leu	Leu	Xaa	Ile	Ala	Asn		
			100					105					110				
ttc	tcc	aac	ctt	att	tct	ctc	cac	cta	aag	aag	aga	att	aag	agt	gtt		384
Phe	Ser	Asn	Leu	Ile	Ser	Leu	His	Leu	Lys	Lys	Arg	Ile	Lys	Ser	Val		
		115					120					125					
gtt	ctg	gtg	ata	ctg	ttg	ggg	ccc	ttg	gta	ttt	ytg	att	tgt	aat	ctt		432
Val	Leu	Val	Ile	Leu	Leu	Gly	Pro	Leu	Val	Phe	Xaa	Ile	Cys	Asn	Leu		
		130				135					140						
gct	gtg	ata	acc	atg	gat	gag	agw	gtg	tgg	aca	aaa	gaa	tat	gaa	gga		480
Ala	Val	Ile	Thr	Met	Asp	Glu	Xaa	Val	Trp	Thr	Lys	Glu	Tyr	Glu	Gly		
145					150				155					160			
aat	gtg	act	tgg	aag	atc	aaa	ttg	agg	aat	gca	ata	cac	ctt	tca	agc		528
Asn	Val	Thr	Trp	Lys	Ile	Lys	Leu	Arg	Asn	Ala	Ile	His	Leu	Ser	Ser		
				165				170						175			
ttg	act	gta	act	act	cta	gca	aac	ctc	ata	ccc	ttt	act	ctg	agc	cta		576
Leu	Thr	Val	Thr	Thr	Leu	Ala	Asn	Leu	Ile	Pro	Phe	Thr	Leu	Ser	Leu		
			180					185					190				
ata	tgt	ttt	ctg	ctg	tta	atc	tgt	tct	ctt	tgt	aaa	cat	ctc	aag	aag		624
Ile	Cys	Phe	Leu	Leu	Leu	Ile	Cys	Ser	Leu	Cys	Lys	His	Leu	Lys	Lys		
		195					200					205					
atg	cgg	ctc	cat	agc	aaa	gga	tct	caa	gat	ccc	agc	acc	aag	gtc	cat		672
Met	Arg	Leu	His	Ser	Lys	Gly	Ser	Gln	Asp	Pro	Ser	Thr	Lys	Val	His		
		210				215				220							
rta	aaa	gct	ttg	caa	act	gtg	acc	tcc	ttc	ctc	atg	tta	ttt	gcc	ayt		720
Xaa	Lys	Ala	Leu	Gln	Thr	Val	Thr	Ser	Phe	Leu	Met	Leu	Phe	Ala	Xaa		
225					230					235				240			
tac	ttt	ctg	tgt	ata	atc	aca	tca	act	tgg	aat	ctt	agg	aca	cag	cag		768
Tyr	Phe	Leu	Cys	Ile	Ile	Thr	Ser	Thr	Trp	Asn	Leu	Arg	Thr	Gln	Gln		
				245				250					255				
agc	aaa	ctt	gta	ctc	ctg	ctt	tgc	caa	act	stt	gca	atc	atg	tat	cct		816
Ser	Lys	Leu	Val	Leu	Leu	Leu	Cys	Gln	Thr	Xaa	Ala	Ile	Met	Tyr	Pro		
			260				265					270					
tca	ttc	cac	tca	ttc	atc	ctg	att	atg	gga	agt	agg	aag	cta	aaa	cag		864
Ser	Phe	His	Ser	Phe	Ile	Leu	Ile	Met	Gly	Ser	Arg	Lys	Leu	Lys	Gln		
		275					280					285					
acc	ttt	ctt	tca	gtt	ttg	tgr	cag	atg	aca	ycg	tga						900
Thr	Phe	Leu	Ser	Val	Leu	Xaa	Gln	Met	Thr	Xaa							

290

295

<210> 40  
 <211> 299  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (32)..(32)  
 <223> The 'Xaa' at location 32 stands for Val, or Ile.

<220>  
 <221> misc\_feature  
 <222> (109)..(109)  
 <223> The 'Xaa' at location 109 stands for Lys, or Thr.

<220>  
 <221> misc\_feature  
 <222> (140)..(140)  
 <223> The 'Xaa' at location 140 stands for Leu.

<220>  
 <221> misc\_feature  
 <222> (152)..(152)  
 <223> The 'Xaa' at location 152 stands for Arg, or Ser.

<220>  
 <221> misc\_feature  
 <222> (225)..(225)  
 <223> The 'Xaa' at location 225 stands for Val, or Ile.

<220>  
 <221> misc\_feature  
 <222> (240)..(240)  
 <223> The 'Xaa' at location 240 stands for Thr, or Ile.

<220>  
 <221> misc\_feature  
 <222> (267)..(267)  
 <223> The 'Xaa' at location 267 stands for Val, or Leu.

<220>  
 <221> misc\_feature  
 <222> (295)..(295)  
 <223> The 'Xaa' at location 295 stands for Trp.

<220>  
 <221> misc\_feature  
 <222> (299)..(299)  
 <223> The 'Xaa' at location 299 stands for Arg, or Cys.

<400> 40

Met	Met	Cys	Phe	Leu	Leu	Ile	Ile	Ser	Ser	Ile	Leu	Val	Val	Phe	Ala
1				5				10						15	

Phe	Val	Leu	Gly	Asn	Val	Ala	Asn	Gly	Phe	Ile	Ala	Leu	Val	Asn	Xaa
		20						25						30	

Ile Asp Trp Val Asn Thr Arg Lys Ile Ser Ser Ala Glu Gln Ile Leu  
 35 40 45  
 Thr Ala Leu Val Val Ser Arg Ile Gly Leu Leu Trp Val Met Leu Phe  
 50 55 60  
 Leu Trp Tyr Ala Thr Val Phe Asn Ser Ala Leu Tyr Gly Leu Glu Val  
 65 70 75 80  
 Arg Ile Val Ala Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Met  
 85 90 95  
 Trp Leu Ala Ala Ser Leu Ser Ile Phe Cys Leu Leu Xaa Ile Ala Asn  
 100 105 110  
 Phe Ser Asn Leu Ile Ser Leu His Leu Lys Lys Arg Ile Lys Ser Val  
 115 120 125  
 Val Leu Val Ile Leu Leu Gly Pro Leu Val Phe Xaa Ile Cys Asn Leu  
 130 135 140  
 Ala Val Ile Thr Met Asp Glu Xaa Val Trp Thr Lys Glu Tyr Glu Gly  
 145 150 155 160  
 Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Ile His Leu Ser Ser  
 165 170 175  
 Leu Thr Val Thr Thr Leu Ala Asn Leu Ile Pro Phe Thr Leu Ser Leu  
 180 185 190  
 Ile Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205  
 Met Arg Leu His Ser Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His  
 210 215 220  
 Xaa Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Met Leu Phe Ala Xaa  
 225 230 235 240  
 Tyr Phe Leu Cys Ile Ile Thr Ser Thr Trp Asn Leu Arg Thr Gln Gln  
 245 250 255  
 Ser Lys Leu Val Leu Leu Leu Cys Gln Thr Xaa Ala Ile Met Tyr Pro  
 260 265 270

Ser Phe His Ser Phe Ile Leu Ile Met Gly Ser Arg Lys Leu Lys Gln  
           275                                  280                                  285

Thr Phe Leu Ser Val Leu Xaa Gln Met Thr Xaa  
       290                                  295

<210> 41  
 <211> 930  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(930)

<220>  
 <221> variation  
 <222> (421)..(421)  
 <223> r is a or g

<220>  
 <221> variation  
 <222> (429)..(429)  
 <223> m is a or c

<220>  
 <221> variation  
 <222> (442)..(442)  
 <223> m is a or c

<220>  
 <221> variation  
 <222> (516)..(516)  
 <223> r is a or g

<220>  
 <221> variation  
 <222> (706)..(706)  
 <223> r is a or g

<220>  
 <221> variation  
 <222> (755)..(755)  
 <223> y is t or c

<220>  
 <221> variation  
 <222> (764)..(764)  
 <223> k is g or t

<220>  
 <221> variation  
 <222> (808)..(808)  
 <223> r is a or g

<400> 41  
 atg atg agt ttt cta cac att gtt ttt tcc att cta gta gtg gtt gca

Met 1	Met	Ser	Phe	Leu 5	His	Ile	Val	Phe	Ser 10	Ile	Leu	Val	Val 15	Ala		
ttt	att	ctt	gga	aat	ttt	gcc	aat	ggc	ttt	ata	gca	ctg	ata	aat	ttc	96
Phe	Ile	Leu	Gly	Asn	Phe	Ala	Asn	Gly	Phe	Ile	Ala	Leu	Ile	Asn	Phe	
			20					25					30			
att	gcc	tgg	gtc	aag	aga	caa	aag	atc	tcc	tca	gct	gat	caa	att	att	144
Ile	Ala	Trp	Val	Lys	Arg	Gln	Lys	Ile	Ser	Ser	Ala	Asp	Gln	Ile	Ile	
		35					40					45				
gct	gct	ctg	gcr	gtc	tcc	aaa	ggt	ggg	ttg	ctc	tgg	gta	ata	tta	tta	192
Ala	Ala	Leu	Ala	Val	Ser	Lys	Val	Gly	Leu	Leu	Trp	Val	Ile	Leu	Leu	
		50				55					60					
cat	tgg	tat	tca	act	gtg	ttg	aat	cca	act	tca	tct	aat	tta	aaa	gta	240
His	Trp	Tyr	Ser	Thr	Val	Leu	Asn	Pro	Thr	Ser	Ser	Asn	Leu	Lys	Val	
65					70					75					80	
ata	att	ttt	att	tct	aat	gcy	tgg	gca	gta	acc	aat	cat	ttc	agc	atc	288
Ile	Ile	Phe	Ile	Ser	Asn	Ala	Trp	Ala	Val	Thr	Asn	His	Phe	Ser	Ile	
				85					90					95		
tgg	ctt	gct	act	agc	ctc	agc	ata	ttt	tat	ttg	ctc	aag	atc	gtc	aat	336
Trp	Leu	Ala	Thr	Ser	Leu	Ser	Ile	Phe	Tyr	Leu	Leu	Lys	Ile	Val	Asn	
			100					105					110			
ttc	tcc	aga	ctt	att	ttt	cat	cac	tta	aaa	agg	aag	gct	aag	agt	gta	384
Phe	Ser	Arg	Leu	Ile	Phe	His	His	Leu	Lys	Arg	Lys	Ala	Lys	Ser	Val	
		115					120					125				
gtt	ctg	gtg	ata	gtg	ttg	ggg	tct	ttg	ttc	ttt	ttg	rtt	tgt	cam	ctt	432
Val	Leu	Val	Ile	Val	Leu	Gly	Ser	Leu	Phe	Phe	Leu	Xaa	Cys	Xaa	Leu	
		130				135					140					
gtg	atg	aaa	mac	acg	tat	ata	aat	gtg	tgg	aca	gaa	gaa	tgt	gaa	gga	480
Val	Met	Lys	Xaa	Thr	Tyr	Ile	Asn	Val	Trp	Thr	Glu	Glu	Cys	Glu	Gly	
145					150					155				160		
aac	gta	act	tgg	aag	atc	aaa	ctg	agg	aat	gca	atr	cac	ctt	tcc	aac	528
Asn	Val	Thr	Trp	Lys	Ile	Lys	Leu	Arg	Asn	Ala	Xaa	His	Leu	Ser	Asn	
				165					170					175		
ttg	act	gta	gcc	atg	cta	gca	aac	ttg	ata	cca	ttc	act	ctg	acc	ctg	576
Leu	Thr	Val	Ala	Met	Leu	Ala	Asn	Leu	Ile	Pro	Phe	Thr	Leu	Thr	Leu	
			180					185					190			
ata	tct	ttt	ctg	ctg	tta	atc	tac	tct	ctg	tgt	aaa	cat	ctg	aag	aag	624
Ile	Ser	Phe	Leu	Leu	Leu	Ile	Tyr	Ser	Leu	Cys	Lys	His	Leu	Lys	Lys	
		195					200					205				
atg	cag	ctc	cat	ggc	aaa	gga	tct	caa	gat	ccc	agc	acc	aag	atc	cac	672
Met	Gln	Leu	His	Gly	Lys	Gly	Ser	Gln	Asp	Pro	Ser	Thr	Lys	Ile	His	
	210					215					220					
ata	aaa	gct	ctg	caa	act	gtg	acc	tcc	ttc	ctc	rta	tta	ctt	gcc	att	720
Ile	Lys	Ala	Leu	Gln	Thr	Val	Thr	Ser	Phe	Leu	Xaa	Leu	Leu	Ala	Ile	
225					230					235					240	
tac	ttt	ctg	tgt	cta	atc	ata	tcg	ttt	tgg	aat	tyt	aag	atg	cka	cca	768
Tyr	Phe	Leu	Cys	Leu	Ile	Ile	Ser	Phe	Trp	Asn	Xaa	Lys	Met	Xaa	Pro	

	245	250	255	
aaa gaa att gtc tta atg ctt tgc caa gct ttt gga atc rta tat cca				816
Lys Glu Ile Val Leu Met Leu Cys Gln Ala Phe Gly Ile Xaa Tyr Pro				
	260	265	270	
tca ttc cac tca ttc att ctg att tgg ggg aac aag acg cta aag cag				864
Ser Phe His Ser Phe Ile Leu Ile Trp Gly Asn Lys Thr Leu Lys Gln				
	275	280	285	
acc ttt ctt tca gtt ttg tgg cag gtg act tgc tgg gca aaa gga cag				912
Thr Phe Leu Ser Val Leu Trp Gln Val Thr Cys Trp Ala Lys Gly Gln				
	290	295	300	
aac cag tca act cca tag				930
Asn Gln Ser Thr Pro				
305				

<210> 42  
 <211> 309  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (141)..(141)  
 <223> The 'Xaa' at location 141 stands for Val, or Ile.

<220>  
 <221> misc\_feature  
 <222> (143)..(143)  
 <223> The 'Xaa' at location 143 stands for Gln, or His.

<220>  
 <221> misc\_feature  
 <222> (148)..(148)  
 <223> The 'Xaa' at location 148 stands for Asn, or His.

<220>  
 <221> misc\_feature  
 <222> (172)..(172)  
 <223> The 'Xaa' at location 172 stands for Met, or Ile.

<220>  
 <221> misc\_feature  
 <222> (236)..(236)  
 <223> The 'Xaa' at location 236 stands for Val, or Ile.

<220>  
 <221> misc\_feature  
 <222> (252)..(252)  
 <223> The 'Xaa' at location 252 stands for Ser, or Phe.

<220>  
 <221> misc\_feature  
 <222> (255)..(255)  
 <223> The 'Xaa' at location 255 stands for Arg, or Leu.

<220>  
 <221> misc\_feature

<222> (270)..(270)

<223> The 'Xaa' at location 270 stands for Val, or Ile.

<400> 42

Met	Met	Ser	Phe	Leu	His	Ile	Val	Phe	Ser	Ile	Leu	Val	Val	Val	Ala	1	5	10	15
Phe	Ile	Leu	Gly	Asn	Phe	Ala	Asn	Gly	Phe	Ile	Ala	Leu	Ile	Asn	Phe	20	25	30	
Ile	Ala	Trp	Val	Lys	Arg	Gln	Lys	Ile	Ser	Ser	Ala	Asp	Gln	Ile	Ile	35	40	45	
Ala	Ala	Leu	Ala	Val	Ser	Lys	Val	Gly	Leu	Leu	Trp	Val	Ile	Leu	Leu	50	55	60	
His	Trp	Tyr	Ser	Thr	Val	Leu	Asn	Pro	Thr	Ser	Ser	Asn	Leu	Lys	Val	65	70	75	80
Ile	Ile	Phe	Ile	Ser	Asn	Ala	Trp	Ala	Val	Thr	Asn	His	Phe	Ser	Ile	85	90	95	
Trp	Leu	Ala	Thr	Ser	Leu	Ser	Ile	Phe	Tyr	Leu	Leu	Lys	Ile	Val	Asn	100	105	110	
Phe	Ser	Arg	Leu	Ile	Phe	His	His	Leu	Lys	Arg	Lys	Ala	Lys	Ser	Val	115	120	125	
Val	Leu	Val	Ile	Val	Leu	Gly	Ser	Leu	Phe	Phe	Leu	Xaa	Cys	Xaa	Leu	130	135	140	
Val	Met	Lys	Xaa	Thr	Tyr	Ile	Asn	Val	Trp	Thr	Glu	Glu	Cys	Glu	Gly	145	150	155	160
Asn	Val	Thr	Trp	Lys	Ile	Lys	Leu	Arg	Asn	Ala	Xaa	His	Leu	Ser	Asn	165	170	175	
Leu	Thr	Val	Ala	Met	Leu	Ala	Asn	Leu	Ile	Pro	Phe	Thr	Leu	Thr	Leu	180	185	190	
Ile	Ser	Phe	Leu	Leu	Leu	Ile	Tyr	Ser	Leu	Cys	Lys	His	Leu	Lys	Lys	195	200	205	
Met	Gln	Leu	His	Gly	Lys	Gly	Ser	Gln	Asp	Pro	Ser	Thr	Lys	Ile	His	210	215	220	



Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Xaa Leu Leu Ala Ile  
 225 230 235 240

Tyr Phe Leu Cys Leu Ile Ile Ser Phe Trp Asn Xaa Lys Met Xaa Pro  
 245 250 255

Lys Glu Ile Val Leu Met Leu Cys Gln Ala Phe Gly Ile Xaa Tyr Pro  
 260 265 270

Ser Phe His Ser Phe Ile Leu Ile Trp Gly Asn Lys Thr Leu Lys Gln  
 275 280 285

Thr Phe Leu Ser Val Leu Trp Gln Val Thr Cys Trp Ala Lys Gly Gln  
 290 295 300

Asn Gln Ser Thr Pro  
 305

<210> 43  
 <211> 900  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(900)

<400> 43  
 atg ata act ttt cta tac att ttt ttt tca att cta ata atg gtt tta 48  
 Met Ile Thr Phe Leu Tyr Ile Phe Phe Ser Ile Leu Ile Met Val Leu  
 1 5 10 15  
 ttt gtt ctc gga aac ttt gcc aat ggc ttc ata gca ctg gta aat ttc 96  
 Phe Val Leu Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Phe  
 20 25 30  
 att gac tgg gtg aag aga aaa aag atc tcc tca gct gac caa att ctc 144  
 Ile Asp Trp Val Lys Arg Lys Lys Ile Ser Ser Ala Asp Gln Ile Leu  
 35 40 45  
 act gct ctg gcg gtc tcc aga att ggt ttg ctc tgg gca tta tta tta 192  
 Thr Ala Leu Ala Val Ser Arg Ile Gly Leu Leu Trp Ala Leu Leu Leu  
 50 55 60  
 aat tgg tat tta act gtg ttg aat cca gct ttt tat agt gta gaa tta 240  
 Asn Trp Tyr Leu Thr Val Leu Asn Pro Ala Phe Tyr Ser Val Glu Leu  
 65 70 75 80  
 aga att act tct tat aat gcc tgg gtt gta acc aac cat ttc agc atg 288  
 Arg Ile Thr Ser Tyr Asn Ala Trp Val Val Thr Asn His Phe Ser Met  
 85 90 95  
 tgg ctt gct gct aac ctc agc ata ttt tat ttg ctc aag att gcc aat 336  
 Trp Leu Ala Ala Asn Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn

100	105	110	
ttc tcc aac ctt ctt ttt ctt cat tta aag agg aga gtt agg agt gtc Phe Ser Asn Leu Leu Phe Leu His Leu Lys Arg Arg Val Arg Ser Val 115 120 125			384
att ctg gtg ata ctg ttg ggg act ttg ata ttt ttg gtt tgt cat ctt Ile Leu Val Ile Leu Leu Gly Thr Leu Ile Phe Leu Val Cys His Leu 130 135 140			432
ctt gtg gca aac atg gat gag agt atg tgg gca gaa gaa tat gaa gga Leu Val Ala Asn Met Asp Glu Ser Met Trp Ala Glu Glu Tyr Glu Gly 145 150 155 160			480
aac atg act ggg aag atg aaa ttg agg aat aca gta cat ctt tca tat Asn Met Thr Gly Lys Met Lys Leu Arg Asn Thr Val His Leu Ser Tyr 165 170 175			528
ttg act gta act acc cta tgg agc ttc ata ccc ttt act ctg tcc ctg Leu Thr Val Thr Thr Leu Trp Ser Phe Ile Pro Phe Thr Leu Ser Leu 180 185 190			576
ata tct ttt ctg atg cta atc tgt tct ctg tat aaa cat ctc aag aag Ile Ser Phe Leu Met Leu Ile Cys Ser Leu Tyr Lys His Leu Lys Lys 195 200 205			624
atg cag ctc cat gga gaa gga tcg caa gat ctc agc acc aag gtc cac Met Gln Leu His Gly Glu Gly Ser Gln Asp Leu Ser Thr Lys Val His 210 215 220			672
ata aaa gct ttg caa act ctg atc tcc ttc ctc ttg tta tgt gcc att Ile Lys Ala Leu Gln Thr Leu Ile Ser Phe Leu Leu Leu Cys Ala Ile 225 230 235 240			720
ttc ttt cta ttc cta atc gtt tcg gtt tgg agt cct agg agg ctg cgg Phe Phe Leu Phe Leu Ile Val Ser Val Trp Ser Pro Arg Arg Leu Arg 245 250 255			768
aat gac cca gtt gtc atg gtt agc aag gct gtt gga aac ata tat ctt Asn Asp Pro Val Val Met Val Ser Lys Ala Val Gly Asn Ile Tyr Leu 260 265 270			816
gca ttc gac tca ttc atc cta att tgg aga acc aag aag cta aaa cac Ala Phe Asp Ser Phe Ile Leu Ile Trp Arg Thr Lys Lys Leu Lys His 275 280 285			864
acc ttt ctt ttg att ttg tgt cag att agg tgc tga Thr Phe Leu Leu Ile Leu Cys Gln Ile Arg Cys 290 295			900

<210> 44  
 <211> 299  
 <212> PRT  
 <213> Homo sapiens

<400> 44

Met Ile Thr Phe Leu Tyr Ile Phe Phe Ser Ile Leu Ile Met Val Leu  
 1 5 10 15

Phe Val Leu Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Phe  
                   20                                  25  30

Ile Asp Trp Val Lys Arg Lys Lys Ile Ser Ser Ala Asp Gln Ile Leu  
                   35                                  40  45

Thr Ala Leu Ala Val Ser Arg Ile Gly Leu Leu Trp Ala Leu Leu Leu  
                   50                                  55  60

Asn Trp Tyr Leu Thr Val Leu Asn Pro Ala Phe Tyr Ser Val Glu Leu  
                   65                                  70  75  80

Arg Ile Thr Ser Tyr Asn Ala Trp Val Val Thr Asn His Phe Ser Met  
                                   85  90  95

Trp Leu Ala Ala Asn Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn  
                                   100  105  110

Phe Ser Asn Leu Leu Phe Leu His Leu Lys Arg Arg Val Arg Ser Val  
                   115                                  120  125

Ile Leu Val Ile Leu Leu Gly Thr Leu Ile Phe Leu Val Cys His Leu  
                   130                                  135  140

Leu Val Ala Asn Met Asp Glu Ser Met Trp Ala Glu Glu Tyr Glu Gly  
                   145                                  150  155  160

Asn Met Thr Gly Lys Met Lys Leu Arg Asn Thr Val His Leu Ser Tyr  
                                   165  170  175

Leu Thr Val Thr Thr Leu Trp Ser Phe Ile Pro Phe Thr Leu Ser Leu  
                                   180  185  190

Ile Ser Phe Leu Met Leu Ile Cys Ser Leu Tyr Lys His Leu Lys Lys  
                   195                                  200  205

Met Gln Leu His Gly Glu Gly Ser Gln Asp Leu Ser Thr Lys Val His  
                   210                                  215  220

Ile Lys Ala Leu Gln Thr Leu Ile Ser Phe Leu Leu Leu Cys Ala Ile  
                   225                                  230  235  240

Phe Phe Leu Phe Leu Ile Val Ser Val Trp Ser Pro Arg Arg Leu Arg  
                                   245  250  255

Asn Asp Pro Val Val Met Val Ser Lys Ala Val Gly Asn Ile Tyr Leu  
 260 265 270

Ala Phe Asp Ser Phe Ile Leu Ile Trp Arg Thr Lys Lys Leu Lys His  
 275 280 285

Thr Phe Leu Leu Ile Leu Cys Gln Ile Arg Cys  
 290 295

<210> 45  
 <211> 957  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(957)

<220>  
 <221> variation  
 <222> (595)..(595)  
 <223> w i s a o r t

<400> 45  
 atg aat gga gac cac atg gtt cta gga tct tcg gtg act gac aag aag 48  
 Met Asn Gly Asp His Met Val Leu Gly Ser Ser Val Thr Asp Lys Lys  
 1 5 10 15  
 gcc atc atc ttg gtt acc att tta ctc ctt tta cgc ctg gta gca ata 96  
 Ala Ile Ile Leu Val Thr Ile Leu Leu Leu Arg Leu Val Ala Ile  
 20 25 30  
 gca ggc aat ggc ttc atc act gct gct ctg ggc gtg gag tgg gtg cta 144  
 Ala Gly Asn Gly Phe Ile Thr Ala Ala Leu Gly Val Glu Trp Val Leu  
 35 40 45  
 cgg aga atg ttg ttg cct tgt gat aag tta ttg gtt agc cta ggg gcc 192  
 Arg Arg Met Leu Leu Pro Cys Asp Lys Leu Leu Val Ser Leu Gly Ala  
 50 55 60  
 tct cgc ttc tgt ctg cag tca gtg gta atg ggt aag acc att tat gtt 240  
 Ser Arg Phe Cys Leu Gln Ser Val Val Met Gly Lys Thr Ile Tyr Val  
 65 70 75 80  
 ttc ttg cat ccg atg gcc ttc cca tac aac cct gta ctg cag ttt cta 288  
 Phe Leu His Pro Met Ala Phe Pro Tyr Asn Pro Val Leu Gln Phe Leu  
 85 90 95  
 gct ttc cag tgg gac ttc ctg aat gct gcc acc tta tgg tcc tct acc 336  
 Ala Phe Gln Trp Asp Phe Leu Asn Ala Ala Thr Leu Trp Ser Ser Thr  
 100 105 110  
 tgg ctc agt gtc ttc tat tgt gtg aaa att gct acc ttc acc cac cct 384  
 Trp Leu Ser Val Phe Tyr Cys Val Lys Ile Ala Thr Phe Thr His Pro  
 115 120 125  
 gtc ttc ttc tgg cta aag cac aag ttg tct ggg tgg cta cca tgg atg 432

Val	Phe	Phe	Trp	Leu	Lys	His	Lys	Leu	Ser	Gly	Trp	Leu	Pro	Trp	Met	
130						135					140					
ctc	ttc	agc	tct	gta	ggg	ctc	tcc	agc	ttc	acc	acc	att	cta	ttt	ttc	480
Leu	Phe	Ser	Ser	Val	Gly	Leu	Ser	Ser	Phe	Thr	Thr	Ile	Leu	Phe	Phe	
145					150					155					160	
ata	ggc	aac	cac	aga	atg	tat	cag	aac	tat	tta	agg	aac	cat	cta	caa	528
Ile	Gly	Asn	His	Arg	Met	Tyr	Gln	Asn	Tyr	Leu	Arg	Asn	His	Leu	Gln	
				165					170					175		
cct	tgg	aat	gtc	act	ggc	gat	agc	ata	cgg	agc	tac	tgt	gag	aaa	ttc	576
Pro	Trp	Asn	Val	Thr	Gly	Asp	Ser	Ile	Arg	Ser	Tyr	Cys	Glu	Lys	Phe	
			180					185					190			
tat	ctc	ttc	cct	cta	aaa	wtg	att	act	tgg	aca	atg	ccc	act	gct	gtc	624
Tyr	Leu	Phe	Pro	Leu	Lys	Xaa	Ile	Thr	Trp	Thr	Met	Pro	Thr	Ala	Val	
		195					200					205				
ttt	ttc	att	tgc	atg	att	ttg	ctc	atc	aca	tct	ctg	gga	aga	cac	agg	672
Phe	Phe	Ile	Cys	Met	Ile	Leu	Leu	Ile	Thr	Ser	Leu	Gly	Arg	His	Arg	
	210					215					220					
aag	aag	gct	ctc	ctt	aca	acc	tca	gga	ttc	cga	gag	ccc	agt	gtg	cag	720
Lys	Lys	Ala	Leu	Leu	Thr	Thr	Ser	Gly	Phe	Arg	Glu	Pro	Ser	Val	Gln	
225					230					235					240	
gca	cac	ata	aag	gct	ctg	ctg	gct	ctc	ctc	tct	ttt	gcc	atg	ctc	ttc	768
Ala	His	Ile	Lys	Ala	Leu	Leu	Ala	Leu	Leu	Ser	Phe	Ala	Met	Leu	Phe	
				245					250					255		
atc	tca	tat	ttc	ctg	tca	ctg	gtg	ttc	agt	gct	gca	ggt	att	ttt	cca	816
Ile	Ser	Tyr	Phe	Leu	Ser	Leu	Val	Phe	Ser	Ala	Ala	Gly	Ile	Phe	Pro	
			260					265					270			
cct	ctg	gac	ttt	aaa	ttc	tgg	gtg	tgg	gag	tca	gtg	att	tat	ctg	tgt	864
Pro	Leu	Asp	Phe	Lys	Phe	Trp	Val	Trp	Glu	Ser	Val	Ile	Tyr	Leu	Cys	
		275					280					285				
gca	gca	gtt	cac	ccc	atc	att	ctg	ctc	ttc	agc	aac	tgc	agg	ctg	aga	912
Ala	Ala	Val	His	Pro	Ile	Ile	Leu	Leu	Phe	Ser	Asn	Cys	Arg	Leu	Arg	
		290				295					300					
gct	gtg	ctg	aag	agt	cgy	cgt	tcc	tca	agg	tgt	ggg	aca	cct	tga		957
Ala	Val	Leu	Lys	Ser	Arg	Arg	Ser	Ser	Arg	Cys	Gly	Thr	Pro			
305					310					315						

<210> 46  
 <211> 318  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (199)..(199)  
 <223> The 'Xaa' at location 199 stands for Met, or Leu.

<400> 46

Met Asn Gly Asp His Met Val Leu Gly Ser Ser Val Thr Asp Lys Lys

1	5	10	15
Ala Ile Ile Leu Val Thr Ile Leu Leu Leu Arg Leu Val Ala Ile	20	25	30
Ala Gly Asn Gly Phe Ile Thr Ala Ala Leu Gly Val Glu Trp Val Leu	35	40	45
Arg Arg Met Leu Leu Pro Cys Asp Lys Leu Leu Val Ser Leu Gly Ala	50	55	60
Ser Arg Phe Cys Leu Gln Ser Val Val Met Gly Lys Thr Ile Tyr Val	65	70	75
Phe Leu His Pro Met Ala Phe Pro Tyr Asn Pro Val Leu Gln Phe Leu	85	90	95
Ala Phe Gln Trp Asp Phe Leu Asn Ala Ala Thr Leu Trp Ser Ser Thr	100	105	110
Trp Leu Ser Val Phe Tyr Cys Val Lys Ile Ala Thr Phe Thr His Pro	115	120	125
Val Phe Phe Trp Leu Lys His Lys Leu Ser Gly Trp Leu Pro Trp Met	130	135	140
Leu Phe Ser Ser Val Gly Leu Ser Ser Phe Thr Thr Ile Leu Phe Phe	145	150	155
Ile Gly Asn His Arg Met Tyr Gln Asn Tyr Leu Arg Asn His Leu Gln	165	170	175
Pro Trp Asn Val Thr Gly Asp Ser Ile Arg Ser Tyr Cys Glu Lys Phe	180	185	190
Tyr Leu Phe Pro Leu Lys Xaa Ile Thr Trp Thr Met Pro Thr Ala Val	195	200	205
Phe Phe Ile Cys Met Ile Leu Leu Ile Thr Ser Leu Gly Arg His Arg	210	215	220
Lys Lys Ala Leu Leu Thr Thr Ser Gly Phe Arg Glu Pro Ser Val Gln	225	230	235
Ala His Ile Lys Ala Leu Leu Ala Leu Leu Ser Phe Ala Met Leu Phe	245	250	255

Ile Ser Tyr Phe Leu Ser Leu Val Phe Ser Ala Ala Gly Ile Phe Pro  
                   260                  265                  270

Pro Leu Asp Phe Lys Phe Trp Val Trp Glu Ser Val Ile Tyr Leu Cys  
                   275                  280                  285

Ala Ala Val His Pro Ile Ile Leu Leu Phe Ser Asn Cys Arg Leu Arg  
                   290                  295                  300

Ala Val Leu Lys Ser Arg Arg Ser Ser Arg Cys Gly Thr Pro  
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 ttt ctt ctt ggg att ttc aca aat ggc atc att gtg gtg gtg aat ggc 96  
 Phe Leu Leu Gly Ile Phe Thr Asn Gly Ile Ile Val Val Val Asn Gly  
                   20                  25                  30  
 att gac ttg atc aag cac aga aaa atg gct ccg ctg gat ctc ctt ctt 144  
 Ile Asp Leu Ile Lys His Arg Lys Met Ala Pro Leu Asp Leu Leu Leu  
                   35                  40                  45  
 tct tgt ctg gca gtt tct aga att ttt ctg cag ttg ttc atc ttc tac 192  
 Ser Cys Leu Ala Val Ser Arg Ile Phe Leu Gln Leu Phe Ile Phe Tyr  
                   50                  55                  60  
 gtt aat gtg att gtt atc ttc ttc ata gaa ttc atc atg tgt tct gcg 240  
 Val Asn Val Ile Val Ile Phe Phe Ile Glu Phe Ile Met Cys Ser Ala  
 65                  70                  75                  80  
 aat tgt gca att ctc tta ttt ata aat gaa ttg gaa ctt tgg ctt gcc 288  
 Asn Cys Ala Ile Leu Leu Phe Ile Asn Glu Leu Glu Leu Trp Leu Ala

85	90	95	
aca tgg ctc ggc gtt ttc tat tgt gcc aag gtt gcc agc gtc cgt cac Thr Trp Leu Gly Val Phe Tyr Cys Ala Lys Val Ala Ser Val Arg His 100 105 110			336
cca ctc ttc atc tgg ttg aag atg agg ata tcc aag ctg gtc cca tgg Pro Leu Phe Ile Trp Leu Lys Met Arg Ile Ser Lys Leu Val Pro Trp 115 120 125			384
atg atc ctg ggg tct ctg cta tat gta tct atg att tgt gtt ttc cat Met Ile Leu Gly Ser Leu Leu Tyr Val Ser Met Ile Cys Val Phe His 130 135 140			432
agc aaa tat gca ggg ttt atg gtc cca tac ttc cta agg aaa ttt ttc Ser Lys Tyr Ala Gly Phe Met Val Pro Tyr Phe Leu Arg Lys Phe Phe 145 150 155 160			480
tcc caa aat gcc aca att caa aaa gaa gat aca ctg gct ata cag att Ser Gln Asn Ala Thr Ile Gln Lys Glu Asp Thr Leu Ala Ile Gln Ile 165 170 175			528
ttc tct ttt gtt gct gag ttc tca gtg cca ttg ctt atc ttc ctt ttt Phe Ser Phe Val Ala Glu Phe Ser Val Pro Leu Leu Ile Phe Leu Phe 180 185 190			576
gct gtt ttg ctc ttg att ttc tct ctg ggg agg cac acc cgg caa atg Ala Val Leu Leu Leu Ile Phe Ser Leu Gly Arg His Thr Arg Gln Met 195 200 205			624
aga aac aca gtg gcc ggc agc agg gtt cct ggc agg ggt gca ccc atc Arg Asn Thr Val Ala Gly Ser Arg Val Pro Gly Arg Gly Ala Pro Ile 210 215 220			672
agc gcg ttg ctg tct atc ctg tcc ttc ctg atc ctc tac ttc tcc cac Ser Ala Leu Leu Ser Ile Leu Ser Phe Leu Ile Leu Tyr Phe Ser His 225 230 235 240			720
tgc atg ata aaa gtt ttt ctc tct tct cta aag ttt cac atc aga agg Cys Met Ile Lys Val Phe Leu Ser Ser Leu Lys Phe His Ile Arg Arg 245 250 255			768
ttc atc ttt ctg ttc ttc atc ctt gtg att ggt ata tac cct tct gga Phe Ile Phe Leu Phe Phe Ile Leu Val Ile Gly Ile Tyr Pro Ser Gly 260 265 270			816
cac tct ctc atc tta att tta gga aat cct aaa ttg aaa caa aat gca His Ser Leu Ile Leu Ile Leu Gly Asn Pro Lys Leu Lys Gln Asn Ala 275 280 285			864
aaa aag ttc ctc ctc cac agt aag tgc tgt cag tga Lys Lys Phe Leu Leu His Ser Lys Cys Cys Gln 290 295			900

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 <212> PRT  
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<400> 48



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 20 25 30  
 Ile Asp Leu Ile Lys His Arg Lys Met Ala Pro Leu Asp Leu Leu Leu  
 35 40 45  
 Ser Cys Leu Ala Val Ser Arg Ile Phe Leu Gln Leu Phe Ile Phe Tyr  
 50 55 60  
 Val Asn Val Ile Val Ile Phe Phe Ile Glu Phe Ile Met Cys Ser Ala  
 65 70 75 80  
 Asn Cys Ala Ile Leu Leu Phe Ile Asn Glu Leu Glu Leu Trp Leu Ala  
 85 90 95  
 Thr Trp Leu Gly Val Phe Tyr Cys Ala Lys Val Ala Ser Val Arg His  
 100 105 110  
 Pro Leu Phe Ile Trp Leu Lys Met Arg Ile Ser Lys Leu Val Pro Trp  
 115 120 125  
 Met Ile Leu Gly Ser Leu Leu Tyr Val Ser Met Ile Cys Val Phe His  
 130 135 140  
 Ser Lys Tyr Ala Gly Phe Met Val Pro Tyr Phe Leu Arg Lys Phe Phe  
 145 150 155 160  
 Ser Gln Asn Ala Thr Ile Gln Lys Glu Asp Thr Leu Ala Ile Gln Ile  
 165 170 175  
 Phe Ser Phe Val Ala Glu Phe Ser Val Pro Leu Leu Ile Phe Leu Phe  
 180 185 190  
 Ala Val Leu Leu Leu Ile Phe Ser Leu Gly Arg His Thr Arg Gln Met  
 195 200 205  
 Arg Asn Thr Val Ala Gly Ser Arg Val Pro Gly Arg Gly Ala Pro Ile  
 210 215 220  
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 225 230 235 240

Lys Lys Phe Leu Leu His Ser Lys Cys Cys Gln  
290 295

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1				5					10					15		
ttt ctt ctt ggg att ttc aca aat ggc atc att gtg gtg gtg aat ggc																96
Phe Leu Leu Gly Ile Phe Thr Asn Gly Ile Ile Val Val Val Asn Gly																
			20					25					30			
att gac ttg atc aag cac aga aaa atg gct ccg ctg gat ctc ctt ctt																144
Ile Asp Leu Ile Lys His Arg Lys Met Ala Pro Leu Asp Leu Leu Leu																
			35				40					45				
tct tgt ctg gca gtt tct aga att ttt ctg cag ttg ttc atc ttc tac																192
Ser Cys Leu Ala Val Ser Arg Ile Phe Leu Gln Leu Phe Ile Phe Tyr																
			50			55					60					
gtt aat gtg att gtt atc ttc ttc ata gaa ttc atc atg tgt tct gcg																240
Val Asn Val Ile Val Ile Phe Phe Ile Glu Phe Ile Met Cys Ser Ala																
65					70				75					80		
aat tgt gca att ctc tta ttt ata aat gaa ttg gaa ctt tgg ctt gcc																288
Asn Cys Ala Ile Leu Leu Phe Ile Asn Glu Leu Glu Leu Trp Leu Ala																
				85				90						95		

aca tgg ctc ggc gtt ttc tat tgt gcc aag gtt gcc agc gtc cgt cac 336  
 Thr Trp Leu Gly Val Phe Tyr Cys Ala Lys Val Ala Ser Val Arg His  
 100 105 110  
 cca ctc ttc atc tgg ttg aag atg agg ata tcc aag ctg gtc cca tgg 384  
 Pro Leu Phe Ile Trp Leu Lys Met Arg Ile Ser Lys Leu Val Pro Trp  
 115 120 125  
 atg atc ctg ggg tct ctg cta tat gta tct atg att tgt gtt ttc cat 432  
 Met Ile Leu Gly Ser Leu Leu Tyr Val Ser Met Ile Cys Val Phe His  
 130 135 140  
 agc aaa tat gca ggg ttt atg gtc cca tac ttc cta agg aaa ttt ttc 480  
 Ser Lys Tyr Ala Gly Phe Met Val Pro Tyr Phe Leu Arg Lys Phe Phe  
 145 150 155 160  
 tcc caa aat gcc aca att caa aaa gaa gat aca ctg gct ata cag att 528  
 Ser Gln Asn Ala Thr Ile Gln Lys Glu Asp Thr Leu Ala Ile Gln Ile  
 165 170 175  
 ttc tct ttt gtt gct gag ttc tca gtg cca ttg ctt atc ttc ctt ttt 576  
 Phe Ser Phe Val Ala Glu Phe Ser Val Pro Leu Leu Ile Phe Leu Phe  
 180 185 190  
 gct gtt ttg ctc ttg att ttc tct ctg ggg agg cac acc tgg caa atg 624  
 Ala Val Leu Leu Leu Ile Phe Ser Leu Gly Arg His Thr Trp Gln Met  
 195 200 205  
 aga aac aca gtg gcc ggc agc agg gtt cct ggc agg ggt gca ccc atc 672  
 Arg Asn Thr Val Ala Gly Ser Arg Val Pro Gly Arg Gly Ala Pro Ile  
 210 215 220  
 agc gcg ttg ctg tct atc ctg tcc ttc ctg atc ctc tac ttc tcc cac 720  
 Ser Ala Leu Leu Ser Ile Leu Ser Phe Leu Ile Leu Tyr Phe Ser His  
 225 230 235 240  
 tgc atg ata aaa gtt ttt ctc tct tct cta aag ttt cac atc aga agg 768  
 Cys Met Ile Lys Val Phe Leu Ser Ser Leu Lys Phe His Ile Arg Arg  
 245 250 255  
 ttc atc ttt ctg ttc ttc atc ctt gtg att ggt ata tac cct tct gga 816  
 Phe Ile Phe Leu Phe Phe Ile Leu Val Ile Gly Ile Tyr Pro Ser Gly  
 260 265 270  
 cac tct ctc atc tta att tta gga aat cct aaa ttg aaa caa aat gca 864  
 His Ser Leu Ile Leu Ile Leu Gly Asn Pro Lys Leu Lys Gln Asn Ala  
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 Lys Lys Phe Leu Leu His Ser Lys Cys Cys Gln  
 290 295

<210> 50  
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<400> 50

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Ile Asp Leu Ile Lys His Arg Lys Met Ala Pro Leu Asp Leu Leu Leu	35	40	45
Ser Cys Leu Ala Val Ser Arg Ile Phe Leu Gln Leu Phe Ile Phe Tyr	50	55	60
Val Asn Val Ile Val Ile Phe Phe Ile Glu Phe Ile Met Cys Ser Ala	65	70	75
Asn Cys Ala Ile Leu Leu Phe Ile Asn Glu Leu Glu Leu Trp Leu Ala	85	90	95
Thr Trp Leu Gly Val Phe Tyr Cys Ala Lys Val Ala Ser Val Arg His	100	105	110
Pro Leu Phe Ile Trp Leu Lys Met Arg Ile Ser Lys Leu Val Pro Trp	115	120	125
Met Ile Leu Gly Ser Leu Leu Tyr Val Ser Met Ile Cys Val Phe His	130	135	140
Ser Lys Tyr Ala Gly Phe Met Val Pro Tyr Phe Leu Arg Lys Phe Phe	145	150	155
Ser Gln Asn Ala Thr Ile Gln Lys Glu Asp Thr Leu Ala Ile Gln Ile	165	170	175
Phe Ser Phe Val Ala Glu Phe Ser Val Pro Leu Leu Ile Phe Leu Phe	180	185	190
Ala Val Leu Leu Leu Ile Phe Ser Leu Gly Arg His Thr Trp Gln Met	195	200	205
Arg Asn Thr Val Ala Gly Ser Arg Val Pro Gly Arg Gly Ala Pro Ile	210	215	220
Ser Ala Leu Leu Ser Ile Leu Ser Phe Leu Ile Leu Tyr Phe Ser His	225	230	235
Cys Met Ile Lys Val Phe Leu Ser Ser Leu Lys Phe His Ile Arg Arg	245	250	255

Phe Ile Phe Leu Phe Phe Ile Leu Val Ile Gly Ile Tyr Pro Ser Gly  
 260 265 270

His Ser Leu Ile Leu Ile Leu Gly Asn Pro Lys Leu Lys Gln Asn Ala  
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Lys Lys Phe Leu Leu His Ser Lys Cys Cys Gln  
 290 295

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 ttt ctt ctt ggg att ttc aca aat ggc atc att gtg gtg gtg aat ggc 96  
 Phe Leu Leu Gly Ile Phe Thr Asn Gly Ile Ile Val Val Val Asn Gly  
 20 25 30  
 att gac ttg atc aag cac aga aaa atg gct ccg ctg gat ctc ctt ctt 144  
 Ile Asp Leu Ile Lys His Arg Lys Met Ala Pro Leu Asp Leu Leu Leu  
 35 40 45  
 tct tgt ctg gca gtt tct aga att ttt ctg cag ttg ttc atc ttc tac 192  
 Ser Cys Leu Ala Val Ser Arg Ile Phe Leu Gln Leu Phe Ile Phe Tyr  
 50 55 60  
 gtt aat gtg att gtt atc ttc ttc ata gaa ttc atc atg tgt tct gcg 240  
 Val Asn Val Ile Val Ile Phe Phe Ile Glu Phe Ile Met Cys Ser Ala  
 65 70 75 80  
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 Asn Cys Ala Ile Leu Leu Phe Ile Asn Glu Leu Glu Leu Trp Leu Ala  
 85 90 95  
 aca tgg ctc ggc gtt ttc tat tgt gcc aag gtt gcc agc gtc cat cac 336  
 Thr Trp Leu Gly Val Phe Tyr Cys Ala Lys Val Ala Ser Val His His

100	105	110	
cca ctc ttc atc tgg ttg aag atg agg ata tcc aag ctg gtc cca tgg Pro Leu Phe Ile Trp Leu Lys Met Arg Ile Ser Lys Leu Val Pro Trp 115 120 125			384
atg atc ctg ggg tct ctg cta tat gta tct atg att tgt gtt ttc cat Met Ile Leu Gly Ser Leu Leu Tyr Val Ser Met Ile Cys Val Phe His 130 135 140			432
agc aaa tat gca ggg ttt atg gtc cca tac ttc cta agg aaa ttt ttc Ser Lys Tyr Ala Gly Phe Met Val Pro Tyr Phe Leu Arg Lys Phe Phe 145 150 155 160			480
tcc caa aat gcc aca att caa aaa gaa gat aca ctg gct ata cag att Ser Gln Asn Ala Thr Ile Gln Lys Glu Asp Thr Leu Ala Ile Gln Ile 165 170 175			528
ttc tct ttt gtt gct gag ttc tca gtg cca ttg ctt atc ttc ctt ttt Phe Ser Phe Val Ala Glu Phe Ser Val Pro Leu Leu Ile Phe Leu Phe 180 185 190			576
gct gtt ttg ctc ttg att ttc tct ctg ggg agg cac acc cgg caa atg Ala Val Leu Leu Leu Ile Phe Ser Leu Gly Arg His Thr Arg Gln Met 195 200 205			624
aga aac aca gtg gcc ggc agc agg gtt cct ggc agg ggt gca ccc atc Arg Asn Thr Val Ala Gly Ser Arg Val Pro Gly Arg Gly Ala Pro Ile 210 215 220			672
agc gcg ttg ctg tct atc ctg tcc ttc ctg atc ctc tac ttc tcc cac Ser Ala Leu Leu Ser Ile Leu Ser Phe Leu Ile Leu Tyr Phe Ser His 225 230 235 240			720
tgc atg ata aaa gtt ttt ctc tct tct cta aag ttt cac atc aga agg Cys Met Ile Lys Val Phe Leu Ser Ser Leu Lys Phe His Ile Arg Arg 245 250 255			768
ttc atc ttt ctg ttc ttc atc ctt gtg att ggt ata tac cct tct gga Phe Ile Phe Leu Phe Phe Ile Leu Val Ile Gly Ile Tyr Pro Ser Gly 260 265 270			816
cac tct ctc atc tta att tta gga aat cct aaa ttg aaa caa aat gca His Ser Leu Ile Leu Ile Leu Gly Asn Pro Lys Leu Lys Gln Asn Ala 275 280 285			864
aaa aag ttc ctc ctc cac agt aag tgc tgt cag tga Lys Lys Phe Leu Leu His Ser Lys Cys Cys Gln 290 295			900

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 <212> PRT  
 <213> homo sapiens

<400> 52

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 20 25 30

Ile Asp Leu Ile Lys His Arg Lys Met Ala Pro Leu Asp Leu Leu Leu  
 35 40 45

Ser Cys Leu Ala Val Ser Arg Ile Phe Leu Gln Leu Phe Ile Phe Tyr  
 50 55 60

Val Asn Val Ile Val Ile Phe Phe Ile Glu Phe Ile Met Cys Ser Ala  
 65 70 75 80

Asn Cys Ala Ile Leu Leu Phe Ile Asn Glu Leu Glu Leu Trp Leu Ala  
 85 90 95

Thr Trp Leu Gly Val Phe Tyr Cys Ala Lys Val Ala Ser Val His His  
 100 105 110

Pro Leu Phe Ile Trp Leu Lys Met Arg Ile Ser Lys Leu Val Pro Trp  
 115 120 125

Met Ile Leu Gly Ser Leu Leu Tyr Val Ser Met Ile Cys Val Phe His  
 130 135 140

Ser Lys Tyr Ala Gly Phe Met Val Pro Tyr Phe Leu Arg Lys Phe Phe  
 145 150 155 160

Ser Gln Asn Ala Thr Ile Gln Lys Glu Asp Thr Leu Ala Ile Gln Ile  
 165 170 175

Phe Ser Phe Val Ala Glu Phe Ser Val Pro Leu Leu Ile Phe Leu Phe  
 180 185 190

Ala Val Leu Leu Leu Ile Phe Ser Leu Gly Arg His Thr Arg Gln Met  
 195 200 205

Arg Asn Thr Val Ala Gly Ser Arg Val Pro Gly Arg Gly Ala Pro Ile  
 210 215 220

Ser Ala Leu Leu Ser Ile Leu Ser Phe Leu Ile Leu Tyr Phe Ser His  
 225 230 235 240

Cys Met Ile Lys Val Phe Leu Ser Ser Leu Lys Phe His Ile Arg Arg  
 245 250 255

Phe Ile Phe Leu Phe Phe Ile Leu Val Ile Gly Ile Tyr Pro Ser Gly  
 260 265 270

His Ser Leu Ile Leu Ile Leu Gly Asn Pro Lys Leu Lys Gln Asn Ala  
 275 280 285

Lys Lys Phe Leu Leu His Ser Lys Cys Cys Gln  
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 ttc aca ctg gga att ctg gtc aat tgt ttc att gag ttg gtc aat ggt 96  
 Phe Thr Leu Gly Ile Leu Val Asn Cys Phe Ile Glu Leu Val Asn Gly  
 20 25 30  
 agc agc tgg ttc aag acc aag aga atg tct ttg tct gac ttc atc atc 144  
 Ser Ser Trp Phe Lys Thr Lys Arg Met Ser Leu Ser Asp Phe Ile Ile  
 35 40 45  
 acc acc ctg gca ctc ttg agg atc att ctg ctg tgt att atc ttg act 192  
 Thr Thr Leu Ala Leu Leu Arg Ile Ile Leu Leu Cys Ile Ile Leu Thr  
 50 55 60  
 gat agt ttt tta ata gaa ttc tct ccc aac aca cat gat tca ggg ata 240  
 Asp Ser Phe Leu Ile Glu Phe Ser Pro Asn Thr His Asp Ser Gly Ile  
 65 70 75 80  
 ata atg caa att att gat gtt tcc tgg aca ttt aca aac cat ctg agc 288  
 Ile Met Gln Ile Ile Asp Val Ser Trp Thr Phe Thr Asn His Leu Ser  
 85 90 95  
 att tgg ctt gcc acc tgt ctt ggt gtc ctc tac tgc ctg aaa atc gcc 336  
 Ile Trp Leu Ala Thr Cys Leu Gly Val Leu Tyr Cys Leu Lys Ile Ala  
 100 105 110  
 agt ttc tct cac ccc aca ttc ctc tgg ctc aag tgg aga gtt tct agg 384  
 Ser Phe Ser His Pro Thr Phe Leu Trp Leu Lys Trp Arg Val Ser Arg  
 115 120 125  
 gtg atg gta tgg atg ctg ttg ggt gca ctg ctc tta tcc tgt ggt agt 432



93/447

Val 130	Met	Val	Trp	Met	Leu	Leu	Gly	Ala	Leu	Leu	Leu	Ser	Cys	Gly	Ser	
						135					140					
acc	gca	tct	ctg	atc	aat	gag	ttt	aag	ctc	tat	tct	gtc	ttt	agg	gga	480
Thr	Ala	Ser	Leu	Ile	Asn	Glu	Phe	Lys	Leu	Tyr	Ser	Val	Phe	Arg	Gly	
145					150					155					160	
att	gag	gcc	acc	agg	aat	gtg	act	gaa	cac	ttc	aga	aag	aag	agg	agt	528
Ile	Glu	Ala	Thr	Arg	Asn	Val	Thr	Glu	His	Phe	Arg	Lys	Lys	Arg	Ser	
				165					170					175		
gag	tat	tat	ctg	atc	cat	gtt	ctt	ggg	act	ctg	tgg	tac	ctg	cct	ccc	576
Glu	Tyr	Tyr	Leu	Ile	His	Val	Leu	Gly	Thr	Leu	Trp	Tyr	Leu	Pro	Pro	
			180					185					190			
tta	att	gtg	tcc	ctg	gcc	tcc	tac	tct	ttg	ctc	atc	ttc	tcc	ctg	ggg	624
Leu	Ile	Val	Ser	Leu	Ala	Ser	Tyr	Ser	Leu	Leu	Ile	Phe	Ser	Leu	Gly	
		195					200					205				
agg	cac	aca	cgg	cag	atg	ctg	caa	aat	ggg	aca	agc	tcc	aga	gat	cca	1672
Arg	His	Thr	Arg	Gln	Met	Leu	Gln	Asn	Gly	Thr	Ser	Ser	Arg	Asp	Pro	
	210					215					220					
acc	act	gag	gcc	cac	aag	agg	gcc	atc	aga	atc	atc	ctt	tcc	ttc	ttc	720
Thr	Thr	Glu	Ala	His	Lys	Arg	Ala	Ile	Arg	Ile	Ile	Leu	Ser	Phe	Phe	
225					230					235				240		
ttt	ctc	ttc	tta	ctt	tac	ttt	ctt	gct	ttc	tta	att	gca	tca	ttt	ggg	768
Phe	Leu	Phe	Leu	Leu	Tyr	Phe	Leu	Ala	Phe	Leu	Ile	Ala	Ser	Phe	Gly	
				245					250					255		
aat	ttc	cta	cca	aaa	acc	aag	atg	gct	aag	atg	att	ggc	gaa	gta	atg	816
Asn	Phe	Leu	Pro	Lys	Thr	Lys	Met	Ala	Lys	Met	Ile	Gly	Glu	Val	Met	
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aca	atg	ttt	tat	cct	gct	ggc	cac	tca	ttt	att	ctc	att	ctg	ggg	aac	864
Thr	Met	Phe	Tyr	Pro	Ala	Gly	His	Ser	Phe	Ile	Leu	Ile	Leu	Gly	Asn	
		275					280					285				
agt	aag	ctg	aag	cag	aca	ttt	gta	gtg	atg	ctc	cgg	tgt	gag	tct	ggg	912
Ser	Lys	Leu	Lys	Gln	Thr	Phe	Val	Val	Met	Leu	Arg	Cys	Glu	Ser	Gly	
	290					295					300					
cat	ctg	aag	cct	gga	tcc	aag	gga	ccc	att	ttc	tct	tag				951
His	Leu	Lys	Pro	Gly	Ser	Lys	Gly	Pro	Ile	Phe	Ser					
305					310					315						

&lt;210&gt; 54

&lt;211&gt; 316

&lt;212&gt; PRT

&lt;213&gt; homo sapiens

&lt;400&gt; 54

Met	Met	Gly	Leu	Thr	Glu	Gly	Val	Phe	Leu	Ile	Leu	Ser	Gly	Thr	Gln
1				5					10					15	

Phe	Thr	Leu	Gly	Ile	Leu	Val	Asn	Cys	Phe	Ile	Glu	Leu	Val	Asn	Gly
		20						25					30		

Ser Ser Trp Phe Lys Thr Lys Arg Met Ser Leu Ser Asp Phe Ile Ile  
 35 40 45  
 Thr Thr Leu Ala Leu Leu Arg Ile Ile Leu Leu Cys Ile Ile Leu Thr  
 50 55 60  
 Asp Ser Phe Leu Ile Glu Phe Ser Pro Asn Thr His Asp Ser Gly Ile  
 65 70 75 80  
 Ile Met Gln Ile Ile Asp Val Ser Trp Thr Phe Thr Asn His Leu Ser  
 85 90 95  
 Ile Trp Leu Ala Thr Cys Leu Gly Val Leu Tyr Cys Leu Lys Ile Ala  
 100 105 110  
 Ser Phe Ser His Pro Thr Phe Leu Trp Leu Lys Trp Arg Val Ser Arg  
 115 120 125  
 Val Met Val Trp Met Leu Leu Gly Ala Leu Leu Leu Ser Cys Gly Ser  
 130 135 140  
 Thr Ala Ser Leu Ile Asn Glu Phe Lys Leu Tyr Ser Val Phe Arg Gly  
 145 150 155 160  
 Ile Glu Ala Thr Arg Asn Val Thr Glu His Phe Arg Lys Lys Arg Ser  
 165 170 175  
 Glu Tyr Tyr Leu Ile His Val Leu Gly Thr Leu Trp Tyr Leu Pro Pro  
 180 185 190  
 Leu Ile Val Ser Leu Ala Ser Tyr Ser Leu Leu Ile Phe Ser Leu Gly  
 195 200 205  
 Arg His Thr Arg Gln Met Leu Gln Asn Gly Thr Ser Ser Arg Asp Pro  
 210 215 220  
 Thr Thr Glu Ala His Lys Arg Ala Ile Arg Ile Ile Leu Ser Phe Phe  
 225 230 235 240  
 Phe Leu Phe Leu Leu Tyr Phe Leu Ala Phe Leu Ile Ala Ser Phe Gly  
 245 250 255  
 Asn Phe Leu Pro Lys Thr Lys Met Ala Lys Met Ile Gly Glu Val Met  
 260 265 270

Thr Met Phe Tyr Pro Ala Gly His Ser Phe Ile Leu Ile Leu Gly Asn  
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 Phe Thr Leu Gly Ile Leu Val Asn Cys Phe Ile Glu Leu Val Asn Gly  
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 Ser Ser Trp Phe Lys Thr Lys Arg Met Ser Leu Ser Asp Phe Ile Ile  
 35 40 45  
 acc acc ctg gca ctc ttg agg atc att ctg ctg tgt att atc ttg act 192  
 Thr Thr Leu Ala Leu Leu Arg Ile Ile Leu Leu Cys Ile Ile Leu Thr  
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 gat agt ttt tta ata gaa ttc tct ccc aac aca cat gat tca ggg ata 240  
 Asp Ser Phe Leu Ile Glu Phe Ser Pro Asn Thr His Asp Ser Gly Ile  
 65 70 75 80  
 ata atg caa att att gat gtt tcc tgg aca ttt aca aac cat ctg agc 288  
 Ile Met Gln Ile Ile Asp Val Ser Trp Thr Phe Thr Asn His Leu Ser  
 85 90 95  
 att tgg ctt gcc acc tgt ctt ggt gtc ctc tac tgc ctg aaa atc gcc 336  
 Ile Trp Leu Ala Thr Cys Leu Gly Val Leu Tyr Cys Leu Lys Ile Ala  
 100 105 110  
 agt ttc tct cac tcc aca ttc ctc tgg ctc aag tgg aga gtt tct agg 384  
 Ser Phe Ser His Ser Thr Phe Leu Trp Leu Lys Trp Arg Val Ser Arg  
 115 120 125

gtg atg gta tgg atg ctg ttg ggt gca ctg ctc tta tcc tgt ggt agt 432  
 Val Met Val Trp Met Leu Leu Gly Ala Leu Leu Leu Ser Cys Gly Ser  
 130 135 140

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 Thr Ala Ser Leu Ile Asn Glu Phe Lys Leu Tyr Ser Val Phe Arg Gly  
 145 150 155 160

att gag gcc acc agg aat gtg act gaa cac ttc aga aag aag agg agt 528  
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gag tat tat ctg atc cat gtt ctt ggg act ctg tgg tac ctg cct ccc 576  
 Glu Tyr Tyr Leu Ile His Val Leu Gly Thr Leu Trp Tyr Leu Pro Pro  
 180 185 190

tta att gtg tcc ctg gcc tcc tac tct ttg ctc atc ttc tcc ctg ggg 624  
 Leu Ile Val Ser Leu Ala Ser Tyr Ser Leu Leu Ile Phe Ser Leu Gly  
 195 200 205

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 Phe Leu Phe Leu Leu Tyr Phe Leu Ala Phe Leu Ile Ala Ser Phe Gly  
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 260 265 270

aca atg ttt tat cct gct ggc cac tca ttt att ctc att ctg ggg aac 864  
 Thr Met Phe Tyr Pro Ala Gly His Ser Phe Ile Leu Ile Leu Gly Asn  
 275 280 285

agt aag ctg aag cag aca ttt gta gtg atg ctc cgg tgt gag tct ggt 912  
 Ser Lys Leu Lys Gln Thr Phe Val Val Met Leu Arg Cys Glu Ser Gly  
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Thr Thr Leu Ala Leu Leu Arg Ile Ile Leu Leu Cys Ile Ile Leu Thr 50 55 60		
Asp Ser Phe Leu Ile Glu Phe Ser Pro Asn Thr His Asp Ser Gly Ile 65 70 75 80		
Ile Met Gln Ile Ile Asp Val Ser Trp Thr Phe Thr Asn His Leu Ser 85 90 95		
Ile Trp Leu Ala Thr Cys Leu Gly Val Leu Tyr Cys Leu Lys Ile Ala 100 105 110		
Ser Phe Ser His Ser Thr Phe Leu Trp Leu Lys Trp Arg Val Ser Arg 115 120 125		
Val Met Val Trp Met Leu Leu Gly Ala Leu Leu Leu Ser Cys Gly Ser 130 135 140		
Thr Ala Ser Leu Ile Asn Glu Phe Lys Leu Tyr Ser Val Phe Arg Gly 145 150 155 160		
Ile Glu Ala Thr Arg Asn Val Thr Glu His Phe Arg Lys Lys Arg Ser 165 170 175		
Glu Tyr Tyr Leu Ile His Val Leu Gly Thr Leu Trp Tyr Leu Pro Pro 180 185 190		
Leu Ile Val Ser Leu Ala Ser Tyr Ser Leu Leu Ile Phe Ser Leu Gly 195 200 205		
Arg His Thr Arg Gln Met Leu Gln Asn Gly Thr Ser Ser Arg Asp Pro 210 215 220		
Thr Thr Glu Ala His Lys Arg Ala Ile Arg Ile Ile Leu Ser Phe Phe 225 230 235 240		
Phe Leu Phe Leu Leu Tyr Phe Leu Ala Phe Leu Ile Ala Ser Phe Gly 245 250 255		
Asn Phe Leu Pro Lys Thr Lys Met Ala Lys Met Ile Gly Glu Val Met 260 265 270		

Thr Met Phe Tyr Pro Ala Gly His Ser Phe Ile Leu Ile Leu Gly Asn  
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Asn	Phe	Val	Gly	Ile	Ile	Met	Asn	Leu	Phe	Ile	Thr	Val	Val	Asn	Cys	
		20						25					30			
aaa	act	tgg	gtc	aaa	agc	cat	aga	atc	tcc	tct	tct	gat	agg	att	ctg	144
Lys	Thr	Trp	Val	Lys	Ser	His	Arg	Ile	Ser	Ser	Ser	Asp	Arg	Ile	Leu	
		35					40					45				
ttc	agc	ctg	ggc	atc	acc	agg	ttt	ctt	atg	ctg	gga	cta	ttt	ctg	gtg	192
Phe	Ser	Leu	Gly	Ile	Thr	Arg	Phe	Leu	Met	Leu	Gly	Leu	Phe	Leu	Val	
	50					55				60						
aac	acc	atc	tac	ttc	gtc	tct	tca	aat	acg	gaa	agg	tca	gtc	tac	ctg	240
Asn	Thr	Ile	Tyr	Phe	Val	Ser	Ser	Asn	Thr	Glu	Arg	Ser	Val	Tyr	Leu	
65				70					75					80		
tct	gct	ttt	ttt	gtg	ttg	tgt	ttc	atg	ttt	ttg	gac	tcg	agc	agt	ctc	288
Ser	Ala	Phe	Phe	Val	Leu	Cys	Phe	Met	Phe	Leu	Asp	Ser	Ser	Ser	Leu	
				85					90					95		
tgg	ttt	gtg	acc	ttg	ctc	aat	atc	ttg	tac	tgt	gtg	aag	att	act	aac	336
Trp	Phe	Val	Thr	Leu	Leu	Asn	Ile	Leu	Tyr	Cys	Val	Lys	Ile	Thr	Asn	
		100						105					110			
ttc	caa	cac	tca	gtg	ttt	ctc	ctg	ctg	aag	cgg	aat	atc	tcc	cca	aag	384
Phe	Gln	His	Ser	Val	Phe	Leu	Leu	Leu	Lys	Arg	Asn	Ile	Ser	Pro	Lys	
		115					120					125				
atc	ccc	agg	ctg	ctg	ctg	gcc	tgt	gtg	ctg	att	tct	gct	ttc	acc	act	432
Ile	Pro	Arg	Leu	Leu	Leu	Ala	Cys	Val	Leu	Ile	Ser	Ala	Phe	Thr	Thr	
	130					135					140					
tgc	ctg	tac	atc	acg	ctt	agc	cag	gca	tca	cct	ttt	cct	gaa	ctt	gtg	480
Cys	Leu	Tyr	Ile	Thr	Leu	Ser	Gln	Ala	Ser	Pro	Phe	Pro	Glu	Leu	Val	
145					150					155				160		
act	acg	aga	aat	aac	aca	tca	ttt	aat	atc	agt	gag	ggc	atc	ttg	tct	528
Thr	Thr	Arg	Asn	Asn	Thr	Ser	Phe	Asn	Ile	Ser	Glu	Gly	Ile	Leu	Ser	
				165					170					175		
tta	gtg	gtt	tct	ttg	gtc	ttg	agc	tca	tct	ctc	cag	ttc	atc	att	aat	576
Leu	Val	Val	Ser	Leu	Val	Leu	Ser	Ser	Ser	Leu	Gln	Phe	Ile	Ile	Asn	
			180					185					190			
gtg	act	tct	gct	tcc	ttg	cta	ata	cac	tcc	ttg	agg	aga	cat	ata	cag	624
Val	Thr	Ser	Ala	Ser	Leu	Leu	Ile	His	Ser	Leu	Arg	Arg	His	Ile	Gln	
		195					200					205				
aag	atg	cag	aaa	aat	gcc	act	ggg	ttc	tgg	aat	ccc	cag	acg	gaa	gct	672
Lys	Met	Gln	Lys	Asn	Ala	Thr	Gly	Phe	Trp	Asn	Pro	Gln	Thr	Glu	Ala	
	210						215				220					
cat	gta	ggg	gct	atg	aag	ctg	atg	gtc	tat	ttc	ctc	atc	ctc	tac	att	720
His	Val	Gly	Ala	Met	Lys	Leu	Met	Val	Tyr	Phe	Leu	Ile	Leu	Tyr	Ile	
225					230					235				240		
cca	tat	tca	gtt	gct	acc	ctg	gtc	cag	tat	ctc	ccc	ttt	tat	gca	ggg	768
Pro	Tyr	Ser	Val	Ala	Thr	Leu	Val	Gln	Tyr	Leu	Pro	Phe	Tyr	Ala	Gly	

245	250	255	
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260	265	270	
tct cca gga cat tct gtt ctc att att atc aca cat cct aaa ctg aaa			864
Ser Pro Gly His Ser Val Leu Ile Ile Ile Thr His Pro Lys Leu Lys			
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Lys Thr Trp Val Lys Ser His Arg Ile Ser Ser Ser Asp Arg Ile Leu			
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Phe Ser Leu Gly Ile Thr Arg Phe Leu Met Leu Gly Leu Phe Leu Val			
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Asn Thr Ile Tyr Phe Val Ser Ser Asn Thr Glu Arg Ser Val Tyr Leu			
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Ser Ala Phe Phe Val Leu Cys Phe Met Phe Leu Asp Ser Ser Ser Leu			
85	90	95	
Trp Phe Val Thr Leu Leu Asn Ile Leu Tyr Cys Val Lys Ile Thr Asn			
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Phe Gln His Ser Val Phe Leu Leu Leu Lys Arg Asn Ile Ser Pro Lys			
115	120	125	
Ile Pro Arg Leu Leu Leu Ala Cys Val Leu Ile Ser Ala Phe Thr Thr			
130	135	140	
Cys Leu Tyr Ile Thr Leu Ser Gln Ala Ser Pro Phe Pro Glu Leu Val			
145	150	155	160



Thr Thr Arg Asn Asn Thr Ser Phe Asn Ile Ser Glu Gly Ile Leu Ser  
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 Leu Val Val Ser Leu Val Leu Ser Ser Ser Leu Gln Phe Ile Ile Asn  
 180 185 190  
 Val Thr Ser Ala Ser Leu Leu Ile His Ser Leu Arg Arg His Ile Gln  
 195 200 205  
 Lys Met Gln Lys Asn Ala Thr Gly Phe Trp Asn Pro Gln Thr Glu Ala  
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 His Val Gly Ala Met Lys Leu Met Val Tyr Phe Leu Ile Leu Tyr Ile  
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 Pro Tyr Ser Val Ala Thr Leu Val Gln Tyr Leu Pro Phe Tyr Ala Gly  
 245 250 255  
 Met Asp Met Gly Thr Lys Ser Ile Cys Leu Ile Phe Ala Thr Leu Tyr  
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 Asn Phe Val Gly Ile Ile Met Asn Leu Phe Ile Thr Val Val Asn Cys  
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aaa act tgg gtc aaa agc cat aga atc tcc tct tct gat agg att ctg 144  
 Lys Thr Trp Val Lys Ser His Arg Ile Ser Ser Ser Asp Arg Ile Leu  
 35 40 45

ttc agc ctg ggc atc acc agg ttt ctt atg ctg gga cta ttt ctg gtg 192  
 Phe Ser Leu Gly Ile Thr Arg Phe Leu Met Leu Gly Leu Phe Leu Val  
 50 55 60

aac acc atc tac ttc gtc tct tca aat acg gaa agg tca gtc tac ctg 240  
 Asn Thr Ile Tyr Phe Val Ser Ser Asn Thr Glu Arg Ser Val Tyr Leu  
 65 70 75 80

tct gct ttt ttt gtg ttg tgt ttc atg ttt ttg gac tcg agc agt ctc 288  
 Ser Ala Phe Phe Val Leu Cys Phe Met Phe Leu Asp Ser Ser Ser Leu  
 85 90 95

tgg ttt gtg acc ttg ctc aat atc ttg tac tgt gtg aag att act aac 336  
 Trp Phe Val Thr Leu Leu Asn Ile Leu Tyr Cys Val Lys Ile Thr Asn  
 100 105 110

ttc caa cac tca gtg ttt ctc ctg ctg aag cgg aat atc tcc cca aag 384  
 Phe Gln His Ser Val Phe Leu Leu Leu Lys Arg Asn Ile Ser Pro Lys  
 115 120 125

atc ccc agg ctg ctg ctg gcc tgt gtg ctg att tct gct ttc acc act 432  
 Ile Pro Arg Leu Leu Leu Ala Cys Val Leu Ile Ser Ala Phe Thr Thr  
 130 135 140

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 Cys Leu Tyr Ile Thr Leu Ser Gln Ala Ser Pro Phe Pro Glu Leu Val  
 145 150 155 160

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 Thr Thr Arg Asn Asn Thr Ser Phe Asn Ile Asn Glu Gly Ile Leu Ser  
 165 170 175  
 tta gtg gtt tct ttg gtc ttg agc tca tct ctc cag ttc atc att aat 576  
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 180 185 190  
 gtg act tct gct tcc ttg cta ata cac tcc ttg agg aga cat ata cag 624  
 Val Thr Ser Ala Ser Leu Leu Ile His Ser Leu Arg Arg His Ile Gln  
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 cat gta ggt gct atg aag ctg atg gtc tat ttc ctc atc ctc tac att 720  
 His Val Gly Ala Met Lys Leu Met Val Tyr Phe Leu Ile Leu Tyr Ile  
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 cca tat tca gtt gct acc ctg gtc cag tat ctc ccc ttt tat gca ggg 768  
 Pro Tyr Ser Val Ala Thr Leu Val Gln Tyr Leu Pro Phe Tyr Ala Gly  
 245 250 255  
 atg gat atg ggg acc aaa tcc att tgt ctg att ttt gcc acc ctt tac 816  
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 260 265 270  
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 Ser Pro Gly His Ser Val Leu Ile Ile Ile Thr His Pro Lys Leu Lys  
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Lys Thr Trp Val Lys Ser His Arg Ile Ser Ser Ser Asp Arg Ile Leu  
35 40 45

Phe Ser Leu Gly Ile Thr Arg Phe Leu Met Leu Gly Leu Phe Leu Val  
50 55 60

Asn Thr Ile Tyr Phe Val Ser Ser Asn Thr Glu Arg Ser Val Tyr Leu  
 65 70 75 80

Ser Ala Phe Phe Val Leu Cys Phe Met Phe Leu Asp Ser Ser Ser Leu  
 85 90 95

Trp Phe Val Thr Leu Leu Asn Ile Leu Tyr Cys Val Lys Ile Thr Asn  
 100 105 110

Phe Gln His Ser Val Phe Leu Leu Leu Lys Arg Asn Ile Ser Pro Lys  
 115 120 125

Ile Pro Arg Leu Leu Leu Ala Cys Val Leu Ile Ser Ala Phe Thr Thr  
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Cys Leu Tyr Ile Thr Leu Ser Gln Ala Ser Pro Phe Pro Glu Leu Val  
 145 150 155 160

Thr Thr Arg Asn Asn Thr Ser Phe Asn Ile Asn Glu Gly Ile Leu Ser  
 165 170 175

Leu Val Val Ser Leu Val Leu Ser Ser Ser Leu Gln Phe Ile Ile Asn  
 180 185 190

Val Thr Ser Ala Ser Leu Leu Ile His Ser Leu Arg Arg His Ile Gln  
 195 200 205

Lys Met Gln Lys Asn Ala Thr Gly Phe Trp Asn Pro Gln Thr Glu Ala  
 210 215 220

His Val Gly Ala Met Lys Leu Met Val Tyr Phe Leu Ile Leu Tyr Ile  
 225 230 235 240

Pro Tyr Ser Val Ala Thr Leu Val Gln Tyr Leu Pro Phe Tyr Ala Gly  
 245 250 255

Met Asp Met Gly Thr Lys Ser Ile Cys Leu Ile Phe Ala Thr Leu Tyr  
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 Asn Phe Val Gly Ile Ile Met Asn Leu Phe Ile Thr Val Val Asn Cys  
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 aaa act tgg gtc aaa agc cat aga atc tcc tct tct gat agg att ctg 144  
 Lys Thr Trp Val Lys Ser His Arg Ile Ser Ser Ser Asp Arg Ile Leu  
 35 40 45  
 ttc agc ctg ggc atc acc agg ttt ctt atg ctg gga cta ttt ctg gtg 192  
 Phe Ser Leu Gly Ile Thr Arg Phe Leu Met Leu Gly Leu Phe Leu Val  
 50 55 60

aac acc atc tac ttc gtc tct tca aat acg gaa agg tca gtc tac ctg Asn Thr Ile Tyr Phe Val Ser Ser Asn Thr Glu Arg Ser Val Tyr Leu 65 70 75 80	240
tct gct ttt ttt gtg ttg tgt ttc atg ttt ttg gac tcg agc agt gtc Ser Ala Phe Phe Val Leu Cys Phe Met Phe Leu Asp Ser Ser Ser Val 85 90 95	288
tgg ttt gtg acc ttg ctc aat atc ttg tac tgt gtg aag att act aac Trp Phe Val Thr Leu Leu Asn Ile Leu Tyr Cys Val Lys Ile Thr Asn 100 105 110	336
ttc caa cac tca gtg ttt ctc ctg ctg aag cgg aat atc tcc cca aag Phe Gln His Ser Val Phe Leu Leu Leu Lys Arg Asn Ile Ser Pro Lys 115 120 125	384
atc ccc agg ctg ctg ctg gcc tgt gtg ctg att tct gct ttc acc act Ile Pro Arg Leu Leu Leu Ala Cys Val Leu Ile Ser Ala Phe Thr Thr 130 135 140	432
tgc ctg tac atc acg ctt agc cag gca tca cct ttt cct gaa ctt gtg Cys Leu Tyr Ile Thr Leu Ser Gln Ala Ser Pro Phe Pro Glu Leu Val 145 150 155 160	480
act acg aga aat aac aca tca ttt aat atc agt gag ggc atc ttg tct Thr Thr Arg Asn Asn Thr Ser Phe Asn Ile Ser Glu Gly Ile Leu Ser 165 170 175	528
tta gtg gtt tct ttg gtc ttg agc tca tct ctc cag ttc atc att aat Leu Val Val Ser Leu Val Leu Ser Ser Ser Leu Gln Phe Ile Ile Asn 180 185 190	576
gtg act tct gct tcc ttg cta ata cac tcc ttg agg aga cat ata cag Val Thr Ser Ala Ser Leu Leu Ile His Ser Leu Arg Arg His Ile Gln 195 200 205	624
aag atg cag aaa aat gcc act ggt ttc tgg aat ccc cag acg gaa gct Lys Met Gln Lys Asn Ala Thr Gly Phe Trp Asn Pro Gln Thr Glu Ala 210 215 220	672
cat gta ggt gct atg aag ctg atg gtc tat ttc ctc atc ctc tac att His Val Gly Ala Met Lys Leu Met Val Tyr Phe Leu Ile Leu Tyr Ile 225 230 235 240	720
cca tat tca gtt gct acc ctg gtc cag tat ctc ccc ttt tat gca ggg Pro Tyr Ser Val Ala Thr Leu Val Gln Tyr Leu Pro Phe Tyr Ala Gly 245 250 255	768
atg gat atg ggg acc aaa tcc att tgt ctg att ttt gcc acc ctt tac Met Asp Met Gly Thr Lys Ser Ile Cys Leu Ile Phe Ala Thr Leu Tyr 260 265 270	816
tct cca gga cat tct gtt ctc att att atc aca cat cct aaa ctg aaa Ser Pro Gly His Ser Val Leu Ile Ile Ile Thr His Pro Lys Leu Lys 275 280 285	864
aca aca gca aag aag att ctt tgt ttc aaa aaa tag Thr Thr Ala Lys Lys Ile Leu Cys Phe Lys Lys 290 295	900

<210> 62  
 <211> 299  
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 <213> homo sapiens

<400> 62

Met Leu Arg Leu Phe Tyr Phe Ser Ala Ile Ile Ala Ser Val Ile Leu  
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Asn Phe Val Gly Ile Ile Met Asn Leu Phe Ile Thr Val Val Asn Cys  
 20 25 30

Lys Thr Trp Val Lys Ser His Arg Ile Ser Ser Ser Asp Arg Ile Leu  
 35 40 45

Phe Ser Leu Gly Ile Thr Arg Phe Leu Met Leu Gly Leu Phe Leu Val  
 50 55 60

Asn Thr Ile Tyr Phe Val Ser Ser Asn Thr Glu Arg Ser Val Tyr Leu  
 65 70 75 80

Ser Ala Phe Phe Val Leu Cys Phe Met Phe Leu Asp Ser Ser Ser Val  
 85 90 95

Trp Phe Val Thr Leu Leu Asn Ile Leu Tyr Cys Val Lys Ile Thr Asn  
 100 105 110

Phe Gln His Ser Val Phe Leu Leu Leu Lys Arg Asn Ile Ser Pro Lys  
 115 120 125

Ile Pro Arg Leu Leu Leu Ala Cys Val Leu Ile Ser Ala Phe Thr Thr  
 130 135 140

Cys Leu Tyr Ile Thr Leu Ser Gln Ala Ser Pro Phe Pro Glu Leu Val  
 145 150 155 160

Thr Thr Arg Asn Asn Thr Ser Phe Asn Ile Ser Glu Gly Ile Leu Ser  
 165 170 175

Leu Val Val Ser Leu Val Leu Ser Ser Ser Leu Gln Phe Ile Ile Asn  
 180 185 190

Val Thr Ser Ala Ser Leu Leu Ile His Ser Leu Arg Arg His Ile Gln  
 195 200 205

Lys Met Gln Lys Asn Ala Thr Gly Phe Trp Asn Pro Gln Thr Glu Ala  
 210 215 220

His Val Gly Ala Met Lys Leu Met Val Tyr Phe Leu Ile Leu Tyr Ile  
225 230 235 240

Pro Tyr Ser Val Ala Thr Leu Val Gln Tyr Leu Pro Phe Tyr Ala Gly  
245 250 255

Met Asp Met Gly Thr Lys Ser Ile Cys Leu Ile Phe Ala Thr Leu Tyr  
260 265 270

Ser Pro Gly His Ser Val Leu Ile Ile Ile Thr His Pro Lys Leu Lys  
275 280 285

Thr Thr Ala Lys Lys Ile Leu Cys Phe Lys Lys  
290 295

<210> 63  
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<212> DNA  
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&lt;400&gt; 63

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Met Leu Arg Leu Phe Tyr Phe Ser Ala Ile Ile Ala Ser Val Ile Leu	
1 5 10 15	
aat ttt gta gga atc att atg aat ctg ttt att aca gtg gtc aat tgc	96
Asn Phe Val Gly Ile Ile Met Asn Leu Phe Ile Thr Val Val Asn Cys	
20 25 30	
aaa act tgg gtc aaa agc cat aga atc tcc tct tct gat agg att ctg	144
Lys Thr Trp Val Lys Ser His Arg Ile Ser Ser Ser Asp Arg Ile Leu	
35 40 45	
ttc agc ctg ggc atc acc agg ttt ctt atg ctg gga cta tta ctg gtg	192
Phe Ser Leu Gly Ile Thr Arg Phe Leu Met Leu Gly Leu Leu Leu Val	
50 55 60	
aac acc atc tac ttc gtc tct tca aat acg gaa agg tca gtc tac ctg	240
Asn Thr Ile Tyr Phe Val Ser Ser Asn Thr Glu Arg Ser Val Tyr Leu	
65 70 75 80	
tct gct ttt ttt gtg ttg tgt ttc atg ttt ttg gac tcg agc agt ctc	288
Ser Ala Phe Phe Val Leu Cys Phe Met Phe Leu Asp Ser Ser Ser Leu	
85 90 95	
tgg ttt gtg acc ttg ctc aat atc ttg tac tgt gtg aag att act aac	336
Trp Phe Val Thr Leu Leu Asn Ile Leu Tyr Cys Val Lys Ile Thr Asn	
100 105 110	
ttc caa cac tca gtg ttt ctc ctg ctg aag cgg aat atc tcc cca aag	384
Phe Gln His Ser Val Phe Leu Leu Leu Lys Arg Asn Ile Ser Pro Lys	
115 120 125	
atc ccc agg ctg ctg ctg gcc tgt gtg ctg att tct gct ttc acc act	432
Ile Pro Arg Leu Leu Leu Ala Cys Val Leu Ile Ser Ala Phe Thr Thr	
130 135 140	
tgc ctg tac atc acg ctt agc cag gca tca cct ttt cct gaa ctt gtg	480
Cys Leu Tyr Ile Thr Leu Ser Gln Ala Ser Pro Phe Pro Glu Leu Val	
145 150 155 160	
act acg aga aat aac aca tca ttt aat atc agt gag ggc atc ttg tct	528
Thr Thr Arg Asn Asn Thr Ser Phe Asn Ile Ser Glu Gly Ile Leu Ser	
165 170 175	
tta gtg gtt tct ttg gtc ttg agc tca tct ctc cag ttc atc att aat	576
Leu Val Val Ser Leu Val Leu Ser Ser Ser Leu Gln Phe Ile Ile Asn	
180 185 190	
gtg act tct gct tcc ttg cta ata cac tcc ttg agg aga cat ata cag	624
Val Thr Ser Ala Ser Leu Leu Ile His Ser Leu Arg Arg His Ile Gln	
195 200 205	
aag atg cag aaa aat gcc act ggt ttc tgg aat ccc cag acg gaa gct	672
Lys Met Gln Lys Asn Ala Thr Gly Phe Trp Asn Pro Gln Thr Glu Ala	

210	215	220	
cat gta ggt gct atg aag ctg atg gtc tat ttc ctc atc ctc tac att			720
His Val Gly Ala Met Lys Leu Met Val Tyr Phe Leu Ile Leu Tyr Ile			
225	230	235	240
cca tat tca gtt gct acc ctg gtc cag tat ctc ccc ttt tat gca ggg			768
Pro Tyr Ser Val Ala Thr Leu Val Gln Tyr Leu Pro Phe Tyr Ala Gly			
	245	250	255
atg gat atg ggg acc aaa tcc att tgt ctg att ttt gcc acc ctt tac			816
Met Asp Met Gly Thr Lys Ser Ile Cys Leu Ile Phe Ala Thr Leu Tyr			
	260	265	270
tct cca gga cat tct gtt ctc att att atc aca cat cct aaa ctg aaa			864
Ser Pro Gly His Ser Val Leu Ile Ile Ile Thr His Pro Lys Leu Lys			
	275	280	285
aca aca gca aag aag att ctt tgt ttc aaa aaa tag			900
Thr Thr Ala Lys Lys Ile Leu Cys Phe Lys Lys			
290	295		

<210> 64  
 <211> 299  
 <212> PRT  
 <213> homo sapiens

<400> 64

Met Leu Arg Leu Phe Tyr Phe Ser Ala Ile Ile Ala Ser Val Ile Leu  
1 5 10 15

Asn Phe Val Gly Ile Ile Met Asn Leu Phe Ile Thr Val Val Asn Cys  
20 25 30

Lys Thr Trp Val Lys Ser His Arg Ile Ser Ser Ser Asp Arg Ile Leu  
35 40 45

Phe Ser Leu Gly Ile Thr Arg Phe Leu Met Leu Gly Leu Leu Leu Val  
50 55 60

Asn Thr Ile Tyr Phe Val Ser Ser Asn Thr Glu Arg Ser Val Tyr Leu  
65 70 75 80

Ser Ala Phe Phe Val Leu Cys Phe Met Phe Leu Asp Ser Ser Ser Leu  
85 90 95

Trp Phe Val Thr Leu Leu Asn Ile Leu Tyr Cys Val Lys Ile Thr Asn  
100 105 110

Phe Gln His Ser Val Phe Leu Leu Leu Lys Arg Asn Ile Ser Pro Lys  
115 120 125

Ile Pro Arg Leu Leu Leu Ala Cys Val Leu Ile Ser Ala Phe Thr Thr  
 130 135 140  
 Cys Leu Tyr Ile Thr Leu Ser Gln Ala Ser Pro Phe Pro Glu Leu Val  
 145 150 155 160  
 Thr Thr Arg Asn Asn Thr Ser Phe Asn Ile Ser Glu Gly Ile Leu Ser  
 165 170 175  
 Leu Val Val Ser Leu Val Leu Ser Ser Ser Leu Gln Phe Ile Ile Asn  
 180 185 190  
 Val Thr Ser Ala Ser Leu Leu Ile His Ser Leu Arg Arg His Ile Gln  
 195 200 205  
 Lys Met Gln Lys Asn Ala Thr Gly Phe Trp Asn Pro Gln Thr Glu Ala  
 210 215 220  
 His Val Gly Ala Met Lys Leu Met Val Tyr Phe Leu Ile Leu Tyr Ile  
 225 230 235 240  
 Pro Tyr Ser Val Ala Thr Leu Val Gln Tyr Leu Pro Phe Tyr Ala Gly  
 245 250 255  
 Met Asp Met Gly Thr Lys Ser Ile Cys Leu Ile Phe Ala Thr Leu Tyr  
 260 265 270  
 Ser Pro Gly His Ser Val Leu Ile Ile Ile Thr His Pro Lys Leu Lys  
 275 280 285  
 Thr Thr Ala Lys Lys Ile Leu Cys Phe Lys Lys  
 290 295

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 1 5 10 15  
 aat ttt gta gga atc att atg aat ctg ttt att aca gtg gtc aat tgc 96  
 Asn Phe Val Gly Ile Ile Met Asn Leu Phe Ile Thr Val Val Asn Cys  
 20 25 30  
 aaa act tgg gtc aaa agc cat aga atc tcc tct tct gat agg att ctg 144  
 Lys Thr Trp Val Lys Ser His Arg Ile Ser Ser Ser Asp Arg Ile Leu  
 35 40 45  
 ttc agc ctg ggc atc acc agg ttt ctt atg ctg gga cta ttt ctg gtg 192  
 Phe Ser Leu Gly Ile Thr Arg Phe Leu Met Leu Gly Leu Phe Leu Val  
 50 55 60  
 aac acc atc tac ttc gtc tct tca aat acg gaa agg tca gtc tac ctg 240  
 Asn Thr Ile Tyr Phe Val Ser Ser Asn Thr Glu Arg Ser Val Tyr Leu  
 65 70 75 80  
 tct gct ttt ttt gtg ttg tgt ttc atg ttt ttg gac tcg agc agt ctc 288  
 Ser Ala Phe Phe Val Leu Cys Phe Met Phe Leu Asp Ser Ser Ser Leu  
 85 90 95  
 tgg ttt gtg acc ttg ctc aat atc ttg tac tgt gtg aag att act aac 336  
 Trp Phe Val Thr Leu Leu Asn Ile Leu Tyr Cys Val Lys Ile Thr Asn  
 100 105 110  
 ttc caa cac tca gtg ttt ctc ctg ctg aag cgg aat atc tcc cca aag 384  
 Phe Gln His Ser Val Phe Leu Leu Leu Lys Arg Asn Ile Ser Pro Lys  
 115 120 125

atc ccc agg ctg ctg ctg gcc tgt gtg ctg att tct gct ttc acc act 432  
 Ile Pro Arg Leu Leu Leu Ala Cys Val Leu Ile Ser Ala Phe Thr Thr  
 130 135 140

tgc ctg tac atc acg ctt agc cag gca tca cct ttt cct gaa ctt gtg 480  
 Cys Leu Tyr Ile Thr Leu Ser Gln Ala Ser Pro Phe Pro Glu Leu Val  
 145 150 155 160

act acg aga aat aac aca tca ttt aat atc aat gag ggc atc ttg tct 528  
 Thr Thr Arg Asn Asn Thr Ser Phe Asn Ile Asn Glu Gly Ile Leu Ser  
 165 170 175

tta gtg gtt tct ttg gtc ttg agc tca tct ctc cag ttc atc att aat 576  
 Leu Val Val Ser Leu Val Leu Ser Ser Ser Leu Gln Phe Ile Ile Asn  
 180 185 190

gtg act tct gct tcc ttg cta ata cac tcc ttg agg aga cat ata cag 624  
 Val Thr Ser Ala Ser Leu Leu Ile His Ser Leu Arg Arg His Ile Gln  
 195 200 205

aag atg cag aaa aat gcc act ggt ttc tgg aat ccc cag acg gaa gct 672  
 Lys Met Gln Lys Asn Ala Thr Gly Phe Trp Asn Pro Gln Thr Glu Ala  
 210 215 220

cat gta ggt gct atg aag ctg atg gtc tat ttc ctc atc ctc tac att 720  
 His Val Gly Ala Met Lys Leu Met Val Tyr Phe Leu Ile Leu Tyr Ile  
 225 230 235 240

cca tat tca gtt gct acc ctg gtc cag tat ctc ccc ttt tat gca ggg 768  
 Pro Tyr Ser Val Ala Thr Leu Val Gln Tyr Leu Pro Phe Tyr Ala Gly  
 245 250 255

atg gat atg ggg acc aaa tcc att tgt ctg att ttt gcc acc ctt tac 816  
 Met Asp Met Gly Thr Lys Ser Ile Cys Leu Ile Phe Ala Thr Leu Tyr  
 260 265 270

tct cca gga cat tct gtt ctc att att atc aca cat cct aaa ctg aaa 864  
 Ser Pro Gly His Ser Val Leu Ile Ile Ile Thr His Pro Lys Leu Lys  
 275 280 285

aca aca gca aag aag att ctt tgt ttc aaa aaa tag 900  
 Thr Thr Ala Lys Lys Ile Leu Cys Phe Lys Lys  
 290 295

<210> 66  
 <211> 299  
 <212> PRT  
 <213> homo sapiens

<400> 66

Met Leu Arg Leu Phe Tyr Ser Ser Ala Ile Ile Ala Ser Val Ile Leu  
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Asn Phe Val Gly Ile Ile Met Asn Leu Phe Ile Thr Val Val Asn Cys  
 20 25 30

Lys Thr Trp Val Lys Ser His Arg Ile Ser Ser Ser Asp Arg Ile Leu  
 35 40 45  
 Phe Ser Leu Gly Ile Thr Arg Phe Leu Met Leu Gly Leu Phe Leu Val  
 50 55 60  
 Asn Thr Ile Tyr Phe Val Ser Ser Asn Thr Glu Arg Ser Val Tyr Leu  
 65 70 75 80  
 Ser Ala Phe Phe Val Leu Cys Phe Met Phe Leu Asp Ser Ser Ser Leu  
 85 90 95  
 Trp Phe Val Thr Leu Leu Asn Ile Leu Tyr Cys Val Lys Ile Thr Asn  
 100 105 110  
 Phe Gln His Ser Val Phe Leu Leu Leu Lys Arg Asn Ile Ser Pro Lys  
 115 120 125  
 Ile Pro Arg Leu Leu Leu Ala Cys Val Leu Ile Ser Ala Phe Thr Thr  
 130 135 140  
 Cys Leu Tyr Ile Thr Leu Ser Gln Ala Ser Pro Phe Pro Glu Leu Val  
 145 150 155 160  
 Thr Thr Arg Asn Asn Thr Ser Phe Asn Ile Asn Glu Gly Ile Leu Ser  
 165 170 175  
 Leu Val Val Ser Leu Val Leu Ser Ser Ser Leu Gln Phe Ile Ile Asn  
 180 185 190  
 Val Thr Ser Ala Ser Leu Leu Ile His Ser Leu Arg Arg His Ile Gln  
 195 200 205  
 Lys Met Gln Lys Asn Ala Thr Gly Phe Trp Asn Pro Gln Thr Glu Ala  
 210 215 220  
 His Val Gly Ala Met Lys Leu Met Val Tyr Phe Leu Ile Leu Tyr Ile  
 225 230 235 240  
 Pro Tyr Ser Val Ala Thr Leu Val Gln Tyr Leu Pro Phe Tyr Ala Gly  
 245 250 255  
 Met Asp Met Gly Thr Lys Ser Ile Cys Leu Ile Phe Ala Thr Leu Tyr  
 260 265 270  
 Ser Pro Gly His Ser Val Leu Ile Ile Ile Thr His Pro Lys Leu Lys

275

280

285

Thr Thr Ala Lys Lys Ile Leu Cys Phe Lys Lys  
 290 295

<210> 67  
 <211> 900  
 <212> DNA  
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 Met Leu Arg Leu Phe Tyr Ser Ser Ala Ile Ile Ala Ser Val Ile Leu  
 1 5 10 15

aat ttt gta gga atc att atg aat ctg ttt att aca gtg gtc aat tgc 96  
 Asn Phe Val Gly Ile Ile Met Asn Leu Phe Ile Thr Val Val Asn Cys  
 20 25 30

aaa act tgg gtc aaa agc cat aga atc tcc tct tct gat agg att ctg Lys Thr Trp Val Lys Ser His Arg Ile Ser Ser Ser Asp Arg Ile Leu 35 40 45	144
ttc agc ctg ggc atc acc agg ttt ctt atg ctg gga cta ttt ctg gtg Phe Ser Leu Gly Ile Thr Arg Phe Leu Met Leu Gly Leu Phe Leu Val 50 55 60	192
aac acc atc tac ttc gtc tct tca aat atg gaa agg tca gtc tac ctg Asn Thr Ile Tyr Phe Val Ser Ser Asn Met Glu Arg Ser Val Tyr Leu 65 70 75 80	240
tct gct ttt ttt gtg ttg tgt ttc atg ttt ttg gac tcg agc agt ctc Ser Ala Phe Phe Val Leu Cys Phe Met Phe Leu Asp Ser Ser Ser Leu 85 90 95	288
tgg ttt gtg acc ttg ctc aat atc ttg tac tgt gtg aag att act aac Trp Phe Val Thr Leu Leu Asn Ile Leu Tyr Cys Val Lys Ile Thr Asn 100 105 110	336
ttc caa cac tca gtg ttt ctc ctg ctg aag cgg aat atc tcc cca aag Phe Gln His Ser Val Phe Leu Leu Leu Lys Arg Asn Ile Ser Pro Lys 115 120 125	384
atc ccc agg ctg ctg ctg gcc tgt gtg ctg att tct gct ttc acc act Ile Pro Arg Leu Leu Leu Ala Cys Val Leu Ile Ser Ala Phe Thr Thr 130 135 140	432
tgc ctg tac atc acg ctt agc cag gca tca cct ttt cct gaa ctt gtg Cys Leu Tyr Ile Thr Leu Ser Gln Ala Ser Pro Phe Pro Glu Leu Val 145 150 155 160	480
act acg aga aat aac aca tca ttt aat atc aat gag ggc atc ttg tct Thr Thr Arg Asn Asn Thr Ser Phe Asn Ile Asn Glu Gly Ile Leu Ser 165 170 175	528
tta gtg gtt tct ttg gtc ttg agc tca tct ctc cag ttc atc att aat Leu Val Val Ser Leu Val Leu Ser Ser Ser Leu Gln Phe Ile Ile Asn 180 185 190	576
gtg act tct gct tcc ttg cta ata cac tcc ttg agg aga cat ata cag Val Thr Ser Ala Ser Leu Leu Ile His Ser Leu Arg Arg His Ile Gln 195 200 205	624
aag atg cag aaa aat gcc act ggt ttc tgg aat ccc cag acg gaa gct Lys Met Gln Lys Asn Ala Thr Gly Phe Trp Asn Pro Gln Thr Glu Ala 210 215 220	672
cat gta ggt gct atg aag ctg atg gtc tat ttc ctc atc ctc tac att His Val Gly Ala Met Lys Leu Met Val Tyr Phe Leu Ile Leu Tyr Ile 225 230 235 240	720
cca tat tca gtt gct acc ctg gtc cag tat ctc ccc ttt tat gca ggg Pro Tyr Ser Val Ala Thr Leu Val Gln Tyr Leu Pro Phe Tyr Ala Gly 245 250 255	768
atg gat atg ggg acc aaa tcc att tgt ctg att ttt gcc acc ctt tac Met Asp Met Gly Thr Lys Ser Ile Cys Leu Ile Phe Ala Thr Leu Tyr 260 265 270	816
tct cca gga cat tct gtt ctc att att atc aca cat cct aaa ctg aaa	864



Ser Pro Gly His Ser Val Leu Ile Ile Ile Thr His Pro Lys Leu Lys  
 275 280 285

aca aca gca aag aag att ctt tgt ttc aaa aaa tag 900  
 Thr Thr Ala Lys Lys Ile Leu Cys Phe Lys Lys  
 290 295

<210> 68  
 <211> 299  
 <212> PRT  
 <213> homo sapiens

<400> 68

Met Leu Arg Leu Phe Tyr Ser Ser Ala Ile Ile Ala Ser Val Ile Leu  
 1 5 10 15

Asn Phe Val Gly Ile Ile Met Asn Leu Phe Ile Thr Val Val Asn Cys  
 20 25 30

Lys Thr Trp Val Lys Ser His Arg Ile Ser Ser Ser Asp Arg Ile Leu  
 35 40 45

Phe Ser Leu Gly Ile Thr Arg Phe Leu Met Leu Gly Leu Phe Leu Val  
 50 55 60

Asn Thr Ile Tyr Phe Val Ser Ser Asn Met Glu Arg Ser Val Tyr Leu  
 65 70 75 80

Ser Ala Phe Phe Val Leu Cys Phe Met Phe Leu Asp Ser Ser Ser Leu  
 85 90 95

Trp Phe Val Thr Leu Leu Asn Ile Leu Tyr Cys Val Lys Ile Thr Asn  
 100 105 110

Phe Gln His Ser Val Phe Leu Leu Leu Lys Arg Asn Ile Ser Pro Lys  
 115 120 125

Ile Pro Arg Leu Leu Leu Ala Cys Val Leu Ile Ser Ala Phe Thr Thr  
 130 135 140

Cys Leu Tyr Ile Thr Leu Ser Gln Ala Ser Pro Phe Pro Glu Leu Val  
 145 150 155 160

Thr Thr Arg Asn Asn Thr Ser Phe Asn Ile Asn Glu Gly Ile Leu Ser  
 165 170 175

Leu Val Val Ser Leu Val Leu Ser Ser Ser Leu Gln Phe Ile Ile Asn  
 180 185 190

Val Thr Ser Ala Ser Leu Leu Ile His Ser Leu Arg Arg His Ile Gln  
195 200 205

Lys Met Gln Lys Asn Ala Thr Gly Phe Trp Asn Pro Gln Thr Glu Ala  
210 215 220

His Val Gly Ala Met Lys Leu Met Val Tyr Phe Leu Ile Leu Tyr Ile  
225 230 235 240

Pro Tyr Ser Val Ala Thr Leu Val Gln Tyr Leu Pro Phe Tyr Ala Gly  
245 250 255

Met Asp Met Gly Thr Lys Ser Ile Cys Leu Ile Phe Ala Thr Leu Tyr  
260 265 270

Ser Pro Gly His Ser Val Leu Ile Ile Ile Thr His Pro Lys Leu Lys  
275 280 285

Thr Thr Ala Lys Lys Ile Leu Cys Phe Lys Lys  
290 295

<210> 69  
<211> 900  
<212> DNA  
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&lt;222&gt; (286)..(286)

&lt;223&gt; SNP

&lt;220&gt;

&lt;221&gt; variation

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&lt;223&gt; SNP

&lt;400&gt; 69

atg ctt cgg tta ttc tct tcc tct gct att att gcc tca gtt att tta	48
Met Leu Arg Leu Phe Ser Ser Ser Ala Ile Ile Ala Ser Val Ile Leu	
1 5 10 15	
aat ttt gta gga atc att atg aat ctg ttt att aca gtg gtc aat tgc	96
Asn Phe Val Gly Ile Ile Met Asn Leu Phe Ile Thr Val Val Asn Cys	
20 25 30	
aaa act tgg gtc aaa agc cat aga atc tcc tct tct gat agg att ctg	144
Lys Thr Trp Val Lys Ser His Arg Ile Ser Ser Ser Asp Arg Ile Leu	
35 40 45	
ttc agc ctg ggc atc acc agg ttt ctt atg ctg gga cta ttt ctg gtg	192
Phe Ser Leu Gly Ile Thr Arg Phe Leu Met Leu Gly Leu Phe Leu Val	
50 55 60	
aac acc atc tac ttc gtc tct tca aat acg gaa agg tca gtc tac ctg	240
Asn Thr Ile Tyr Phe Val Ser Ser Asn Thr Glu Arg Ser Val Tyr Leu	
65 70 75 80	
tct gct ttt ttt gtg ttg tgt ttc atg ttt ttg gac tcg agc agt ctc	288
Ser Ala Phe Phe Val Leu Cys Phe Met Phe Leu Asp Ser Ser Ser Leu	
85 90 95	
tgg ttt gtg acc ttg ctc aat atc ttg tac tgt gtg aag att act aac	336
Trp Phe Val Thr Leu Leu Asn Ile Leu Tyr Cys Val Lys Ile Thr Asn	
100 105 110	
ttc caa cac tca gtg ttt ctc ctg ctg aag cgg aat atc tcc cca aag	384
Phe Gln His Ser Val Phe Leu Leu Leu Lys Arg Asn Ile Ser Pro Lys	
115 120 125	
atc ccc agg ctg ctg ctg gcc tgt gtg ctg att tct gct ttc acc act	432
Ile Pro Arg Leu Leu Leu Ala Cys Val Leu Ile Ser Ala Phe Thr Thr	
130 135 140	
tgc ctg tac atc acg ctt agc cag gca tca cct ttt cct gaa ctt gtg	480
Cys Leu Tyr Ile Thr Leu Ser Gln Ala Ser Pro Phe Pro Glu Leu Val	
145 150 155 160	
act acg aga aat aac aca tca ttt aat atc aat gag ggc atc ttg tct	528
Thr Thr Arg Asn Asn Thr Ser Phe Asn Ile Asn Glu Gly Ile Leu Ser	
165 170 175	
tta gtg gtt tct ttg gtc ttg agc tca tct ctc cag ttc atc att aat	576
Leu Val Val Ser Leu Val Leu Ser Ser Ser Leu Gln Phe Ile Ile Asn	
180 185 190	
gtg act tct gct tcc ttg cta ata cac tcc ttg agg aga cat ata cag	624
Val Thr Ser Ala Ser Leu Leu Ile His Ser Leu Arg Arg His Ile Gln	
195 200 205	

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 Met Leu Arg Leu Phe Ser Ser Ser Ala Ile Ile Ala Ser Val Ile Leu  
 1 5 10 15  
 aat ttt gta gga atc att atg aat ctg ttt att aca gtg gtc aat tgc 96  
 Asn Phe Val Gly Ile Ile Met Asn Leu Phe Ile Thr Val Val Asn Cys  
 20 25 30  
 aaa act tgg gtc aaa agc cat aga atc tcc tct tct gat agg att ctg 144  
 Lys Thr Trp Val Lys Ser His Arg Ile Ser Ser Ser Asp Arg Ile Leu  
 35 40 45  
 ttc agc ctg ggc atc acc agg ttt ctt atg ctg gga cta ttt ctg gtg 192  
 Phe Ser Leu Gly Ile Thr Arg Phe Leu Met Leu Gly Leu Phe Leu Val  
 50 55 60  
 aac acc atc tac ttc gtc tct tca aat acg gaa agg tca gtc tac ctg 240  
 Asn Thr Ile Tyr Phe Val Ser Ser Asn Thr Glu Arg Ser Val Tyr Leu  
 65 70 75 80  
 tct gct ttt ttt gtg ttg tgt ttc atg ttt ttg gac tcg agc agt ctc 288  
 Ser Ala Phe Phe Val Leu Cys Phe Met Phe Leu Asp Ser Ser Ser Leu  
 85 90 95  
 tgg ttt gtg acc ttg ctc aat atc ttg tac tgt gtg aag att act aac 336  
 Trp Phe Val Thr Leu Leu Asn Ile Leu Tyr Cys Val Lys Ile Thr Asn  
 100 105 110  
 ttc caa cac tca gtg ttt ctc ctg ctg aag cgg aat atc tcc cca aag 384  
 Phe Gln His Ser Val Phe Leu Leu Leu Lys Arg Asn Ile Ser Pro Lys  
 115 120 125  
 atc ccc agg ctg ctg ctg gcc tgt gtg ctg att tct gct ttc acc act 432  
 Ile Pro Arg Leu Leu Leu Ala Cys Val Leu Ile Ser Ala Phe Thr Thr  
 130 135 140  
 tgc ctg tac atc acg ctt agc cag gca tca cct ttt cct gaa ctt gtg 480  
 Cys Leu Tyr Ile Thr Leu Ser Gln Ala Ser Pro Phe Pro Glu Leu Val  
 145 150 155 160  
 act acg aga aat aac aca tca ttt aat atc aat gag ggc atc ttg tct 528  
 Thr Thr Arg Asn Asn Thr Ser Phe Asn Ile Asn Glu Gly Ile Leu Ser  
 165 170 175  
 tta gtg gtt tct ttg gtc ttg agc tca tct ctc cag ttc atc att aat 576  
 Leu Val Val Ser Leu Val Leu Ser Ser Ser Leu Gln Phe Ile Ile Asn  
 180 185 190  
 gtg act tct gct tcc ttg cta ata cac tcc ttg agg aga cat ata cag 624  
 Val Thr Ser Ala Ser Leu Leu Ile His Ser Leu Arg Arg His Ile Gln  
 195 200 205

aag atg cag aaa aat gcc act ggt ttc tgg aat ccc cag acg gaa gct 672  
 Lys Met Gln Lys Asn Ala Thr Gly Phe Trp Asn Pro Gln Thr Glu Ala  
 210 215 220

cat gta ggt gct atg aag ctg atg gtc tat ttc ctc atc ctc tac att 720  
 His Val Gly Ala Met Lys Leu Met Val Tyr Phe Leu Ile Leu Tyr Ile  
 225 230 235 240

cca tat tca gtt gct acc ctg gtc cag tat ctc ccc ttt tat gca ggg 768  
 Pro Tyr Ser Val Ala Thr Leu Val Gln Tyr Leu Pro Phe Tyr Ala Gly  
 245 250 255

atg gat atg ggg acc aaa tcc att tgt ctg att ttt gcc acc ctt tac 816  
 Met Asp Met Gly Thr Lys Ser Ile Cys Leu Ile Phe Ala Thr Leu Tyr  
 260 265 270

tct cca gga cat tct gtt ctc att att atc aca cat cct aaa ctg aaa 864  
 Ser Pro Gly His Ser Val Leu Ile Ile Ile Thr His Pro Lys Leu Lys  
 275 280 285

aca aca gca aag aag att ctt tgt ttc aaa aaa tag 900  
 Thr Thr Ala Lys Lys Ile Leu Cys Phe Lys Lys  
 290 295

<210> 70  
 <211> 299  
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<400> 70

Met Leu Arg Leu Phe Ser Ser Ser Ala Ile Ile Ala Ser Val Ile Leu  
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Asn Phe Val Gly Ile Ile Met Asn Leu Phe Ile Thr Val Val Asn Cys  
 20 25 30

Lys Thr Trp Val Lys Ser His Arg Ile Ser Ser Ser Asp Arg Ile Leu  
 35 40 45

Phe Ser Leu Gly Ile Thr Arg Phe Leu Met Leu Gly Leu Phe Leu Val  
 50 55 60

Asn Thr Ile Tyr Phe Val Ser Ser Asn Thr Glu Arg Ser Val Tyr Leu  
 65 70 75 80

Ser Ala Phe Phe Val Leu Cys Phe Met Phe Leu Asp Ser Ser Ser Leu  
 85 90 95

Trp Phe Val Thr Leu Leu Asn Ile Leu Tyr Cys Val Lys Ile Thr Asn  
 100 105 110

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Phe Gln His Ser Val Phe Leu Leu Leu Lys Arg Asn Ile Ser Pro Lys  
 115 120 125

Ile Pro Arg Leu Leu Leu Ala Cys Val Leu Ile Ser Ala Phe Thr Thr  
 130 135 140

Cys Leu Tyr Ile Thr Leu Ser Gln Ala Ser Pro Phe Pro Glu Leu Val  
 145 150 155 160

Thr Thr Arg Asn Asn Thr Ser Phe Asn Ile Asn Glu Gly Ile Leu Ser  
 165 170 175

Leu Val Val Ser Leu Val Leu Ser Ser Ser Leu Gln Phe Ile Ile Asn  
 180 185 190

Val Thr Ser Ala Ser Leu Leu Ile His Ser Leu Arg Arg His Ile Gln  
 195 200 205

Lys Met Gln Lys Asn Ala Thr Gly Phe Trp Asn Pro Gln Thr Glu Ala  
 210 215 220

His Val Gly Ala Met Lys Leu Met Val Tyr Phe Leu Ile Leu Tyr Ile  
 225 230 235 240

Pro Tyr Ser Val Ala Thr Leu Val Gln Tyr Leu Pro Phe Tyr Ala Gly  
 245 250 255

Met Asp Met Gly Thr Lys Ser Ile Cys Leu Ile Phe Ala Thr Leu Tyr  
 260 265 270

Ser Pro Gly His Ser Val Leu Ile Ile Ile Thr His Pro Lys Leu Lys  
 275 280 285

Thr Thr Ala Lys Lys Ile Leu Cys Phe Lys Lys  
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<210> 71  
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&lt;221&gt; variation

&lt;222&gt; (20)..(20)

&lt;223&gt; SNP

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&lt;221&gt; variation

&lt;222&gt; (186)..(186)

&lt;223&gt; SNP

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&lt;221&gt; variation

&lt;222&gt; (221)..(221)

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&lt;221&gt; variation

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&lt;400&gt; 71

atg ctt cag tta ttc tat tcc tct gct att att gcc tca gtt att tta	48
Met Leu Gln Leu Phe Tyr Ser Ser Ala Ile Ile Ala Ser Val Ile Leu	
1 5 10 15	
aat ttt gta gga atc att atg aat ctg ttt att aca gtg gtc aat tgc	96
Asn Phe Val Gly Ile Ile Met Asn Leu Phe Ile Thr Val Val Asn Cys	
20 25 30	
aaa act tgg gtc aaa agc cat aga atc tcc tct tct gat agg att ctg	144
Lys Thr Trp Val Lys Ser His Arg Ile Ser Ser Ser Asp Arg Ile Leu	
35 40 45	
ttc agc ctg ggc atc acc agg ttt ctt atg ctg gga cta ttt ctg gtg	192
Phe Ser Leu Gly Ile Thr Arg Phe Leu Met Leu Gly Leu Phe Leu Val	
50 55 60	
aac acc atc tac ttc gtc tct tca aat acg gaa agg tca gtc tac ctg	240
Asn Thr Ile Tyr Phe Val Ser Ser Asn Thr Glu Arg Ser Val Tyr Leu	
65 70 75 80	
tct gct ttt ttt gtg ttg tgt ttc atg ttt ttg gac tcg agc agt ctc	288
Ser Ala Phe Phe Val Leu Cys Phe Met Phe Leu Asp Ser Ser Ser Leu	
85 90 95	
tgg ttt gtg acc ttg ctc aat atc ttg tac tgt gtg aag att act aac	336
Trp Phe Val Thr Leu Leu Asn Ile Leu Tyr Cys Val Lys Ile Thr Asn	
100 105 110	

ttc caa cac tca gtg ttt ctc ctg ctg aag cgg aat atc tcc cca aag 384  
 Phe Gln His Ser Val Phe Leu Leu Leu Lys Arg Asn Ile Ser Pro Lys  
 115 120 125  
 atc ccc agg ctg ctg ctg gcc tgt gtg ctg att tct gct ttc acc act 432  
 Ile Pro Arg Leu Leu Leu Ala Cys Val Leu Ile Ser Ala Phe Thr Thr  
 130 135 140  
 tgc ctg tac atc acg ctt agc cag gca tca cct ttt cct gaa ctt gtg 480  
 Cys Leu Tyr Ile Thr Leu Ser Gln Ala Ser Pro Phe Pro Glu Leu Val  
 145 150 155 160  
 act acg aga aat aac aca tca ttt aat atc aat gag ggc atc ttg tct 528  
 Thr Thr Arg Asn Asn Thr Ser Phe Asn Ile Asn Glu Gly Ile Leu Ser  
 165 170 175  
 tta gtg gtt tct ttg gtc ttg agc tca tct ctc cag ttc atc att aat 576  
 Leu Val Val Ser Leu Val Leu Ser Ser Ser Leu Gln Phe Ile Ile Asn  
 180 185 190  
 gtg act tct gct tcc ttg cta ata cac tcc ttg agg aga cat ata cag 624  
 Val Thr Ser Ala Ser Leu Leu Ile His Ser Leu Arg Arg His Ile Gln  
 195 200 205  
 aag atg cag aaa aat gcc act ggt ttc tgg aat ccc cag acg gaa gct 672  
 Lys Met Gln Lys Asn Ala Thr Gly Phe Trp Asn Pro Gln Thr Glu Ala  
 210 215 220  
 cat gta ggt gct atg aag ctg atg gtc tat ttc ctc atc ctc tac att 720  
 His Val Gly Ala Met Lys Leu Met Val Tyr Phe Leu Ile Leu Tyr Ile  
 225 230 235 240  
 cca tat tca gtt gct acc ctg gtc cag tat ctc ccc ttt tat gca ggg 768  
 Pro Tyr Ser Val Ala Thr Leu Val Gln Tyr Leu Pro Phe Tyr Ala Gly  
 245 250 255  
 atg gat atg ggg acc aaa tcc att tgt ctg att ttt gcc acc ctt tac 816  
 Met Asp Met Gly Thr Lys Ser Ile Cys Leu Ile Phe Ala Thr Leu Tyr  
 260 265 270  
 tct cca gga cat tct gtt ctc att att atc aca cat cct aaa ctg aaa 864  
 Ser Pro Gly His Ser Val Leu Ile Ile Ile Thr His Pro Lys Leu Lys  
 275 280 285  
 aca aca gca aag aag att ctt tgt ttc aaa aaa tag 900  
 Thr Thr Ala Lys Lys Ile Leu Cys Phe Lys Lys  
 290 295

<210> 72  
 <211> 299  
 <212> PRT  
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<400> 72

Met Leu Gln Leu Phe Tyr Ser Ser Ala Ile Ile Ala Ser Val Ile Leu  
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Asn Phe Val Gly Ile Ile Met Asn Leu Phe Ile Thr Val Val Asn Cys



20

25

30

Lys Thr Trp Val Lys Ser His Arg Ile Ser Ser Ser Asp Arg Ile Leu  
 35 40 45

Phe Ser Leu Gly Ile Thr Arg Phe Leu Met Leu Gly Leu Phe Leu Val  
 50 55 60

Asn Thr Ile Tyr Phe Val Ser Ser Asn Thr Glu Arg Ser Val Tyr Leu  
 65 70 75 80

Ser Ala Phe Phe Val Leu Cys Phe Met Phe Leu Asp Ser Ser Ser Leu  
 85 90 95

Trp Phe Val Thr Leu Leu Asn Ile Leu Tyr Cys Val Lys Ile Thr Asn  
 100 105 110

Phe Gln His Ser Val Phe Leu Leu Leu Lys Arg Asn Ile Ser Pro Lys  
 115 120 125

Ile Pro Arg Leu Leu Leu Ala Cys Val Leu Ile Ser Ala Phe Thr Thr  
 130 135 140

Cys Leu Tyr Ile Thr Leu Ser Gln Ala Ser Pro Phe Pro Glu Leu Val  
 145 150 155 160

Thr Thr Arg Asn Asn Thr Ser Phe Asn Ile Asn Glu Gly Ile Leu Ser  
 165 170 175

Leu Val Val Ser Leu Val Leu Ser Ser Ser Leu Gln Phe Ile Ile Asn  
 180 185 190

Val Thr Ser Ala Ser Leu Leu Ile His Ser Leu Arg Arg His Ile Gln  
 195 200 205

Lys Met Gln Lys Asn Ala Thr Gly Phe Trp Asn Pro Gln Thr Glu Ala  
 210 215 220

His Val Gly Ala Met Lys Leu Met Val Tyr Phe Leu Ile Leu Tyr Ile  
 225 230 235 240

Pro Tyr Ser Val Ala Thr Leu Val Gln Tyr Leu Pro Phe Tyr Ala Gly  
 245 250 255

Met Asp Met Gly Thr Lys Ser Ile Cys Leu Ile Phe Ala Thr Leu Tyr  
 260 265 270

Ser Pro Gly His Ser Val Leu Ile Ile Ile Thr His Pro Lys Leu Lys  
 275 280 285

Thr Thr Ala Lys Lys Ile Leu Cys Phe Lys Lys  
 290 295

<210> 73  
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 1 5 10 15  
 ttt ctc atc ggt tta att gga aat gga agc ctg gtg gtc tgg agt ttt 96  
 Phe Leu Ile Gly Leu Ile Gly Asn Gly Ser Leu Val Val Trp Ser Phe  
 20 25 30  
 aga gaa tgg atc aga aaa ttc aac tgg tcc tca tat aac ctc att atc 144  
 Arg Glu Trp Ile Arg Lys Phe Asn Trp Ser Ser Tyr Asn Leu Ile Ile

35	40	45	
ctg ggc ctg gct ggc tgc cga ttt ctc ctg cag tgg ctg atc att ttg Leu Gly Leu Ala Gly Cys Arg Phe Leu Leu Gln Trp Leu Ile Ile Leu 50 55 60			192
gac tta agc ttg ttt cca ctt ttc cag agc agc cgt tgg ctt cgc tat Asp Leu Ser Leu Phe Pro Leu Phe Gln Ser Ser Arg Trp Leu Arg Tyr 65 70 75 80			240
ctt agt atc ttc tgg gtc ctg gta agc cag gcc agc tta tgg ttt gcc Leu Ser Ile Phe Trp Val Leu Val Ser Gln Ala Ser Leu Trp Phe Ala 85 90 95			288
acc ttc ctc agt gtc ttc tat tgc aag aag atc acg acc ttc gat cgc Thr Phe Leu Ser Val Phe Tyr Cys Lys Lys Ile Thr Thr Phe Asp Arg 100 105 110			336
ccg gcc tac ttg tgg ctg aag cag agg gcc tat aac ctg agt ctc tgg Pro Ala Tyr Leu Trp Leu Lys Gln Arg Ala Tyr Asn Leu Ser Leu Trp 115 120 125			384
tgc ctt ctg ggc tac ttt ata atc aat ttg tta ctt aca gtc caa att Cys Leu Leu Gly Tyr Phe Ile Ile Asn Leu Leu Leu Thr Val Gln Ile 130 135 140			432
ggc tta aca ttc tat cat cct ccc caa gga aac agc agc att cgg tat Gly Leu Thr Phe Tyr His Pro Pro Gln Gly Asn Ser Ser Ile Arg Tyr 145 150 155 160			480
ccc ttt gaa agc tgg cag tac ctg tat gca ttt cag ctc aat tca gga Pro Phe Glu Ser Trp Gln Tyr Leu Tyr Ala Phe Gln Leu Asn Ser Gly 165 170 175			528
agt tat ttg cct tta gtg gtg ttt ctt gtt tcc tct ggg atg ctg att Ser Tyr Leu Pro Leu Val Val Phe Leu Val Ser Ser Gly Met Leu Ile 180 185 190			576
gtc tct ttg tat aca cac cac aag aag atg aag gtc cat tca gct ggt Val Ser Leu Tyr Thr His His Lys Lys Met Lys Val His Ser Ala Gly 195 200 205			624
agg agg gat gtc cgg gcc aag gct cac atc act gcg ctg aag tcc ttg Arg Arg Asp Val Arg Ala Lys Ala His Ile Thr Ala Leu Lys Ser Leu 210 215 220			672
ggc tgc ttc ctc tta ctt cac ctg gtt tat atc atg gcc agc ccc ttc Gly Cys Phe Leu Leu Leu His Leu Val Tyr Ile Met Ala Ser Pro Phe 225 230 235 240			720
tcc atc acc tcc aag act tat cct cct gat ctc acc agt gtc ttc atc Ser Ile Thr Ser Lys Thr Tyr Pro Pro Asp Leu Thr Ser Val Phe Ile 245 250 255			768
tgg gag aca ctc atg gca gcc tat cct tct ctt cat tct ctc ata ttg Trp Glu Thr Leu Met Ala Ala Tyr Pro Ser Leu His Ser Leu Ile Leu 260 265 270			816
atc atg ggg att cct agg gtg aag cag act tgt cag aag atc ctg tgg Ile Met Gly Ile Pro Arg Val Lys Gln Thr Cys Gln Lys Ile Leu Trp 275 280 285			864

aag aca gtg tgt gct cgg aga tgc tgg ggc cca tga  
 Lys Thr Val Cys Ala Arg Arg Cys Trp Gly Pro  
 290 295

900

<210> 74  
 <211> 299  
 <212> PRT  
 <213> homo sapiens

<400> 74

Met Leu Ser Ala Gly Leu Gly Leu Leu Met Leu Val Ala Val Val Glu  
 1 5 10 15

Phe Leu Ile Gly Leu Ile Gly Asn Gly Ser Leu Val Val Trp Ser Phe  
 20 25 30

Arg Glu Trp Ile Arg Lys Phe Asn Trp Ser Ser Tyr Asn Leu Ile Ile  
 35 40 45

Leu Gly Leu Ala Gly Cys Arg Phe Leu Leu Gln Trp Leu Ile Ile Leu  
 50 55 60

Asp Leu Ser Leu Phe Pro Leu Phe Gln Ser Ser Arg Trp Leu Arg Tyr  
 65 70 75 80

Leu Ser Ile Phe Trp Val Leu Val Ser Gln Ala Ser Leu Trp Phe Ala  
 85 90 95

Thr Phe Leu Ser Val Phe Tyr Cys Lys Lys Ile Thr Thr Phe Asp Arg  
 100 105 110

Pro Ala Tyr Leu Trp Leu Lys Gln Arg Ala Tyr Asn Leu Ser Leu Trp  
 115 120 125

Cys Leu Leu Gly Tyr Phe Ile Ile Asn Leu Leu Leu Thr Val Gln Ile  
 130 135 140

Gly Leu Thr Phe Tyr His Pro Pro Gln Gly Asn Ser Ser Ile Arg Tyr  
 145 150 155 160

Pro Phe Glu Ser Trp Gln Tyr Leu Tyr Ala Phe Gln Leu Asn Ser Gly  
 165 170 175

Ser Tyr Leu Pro Leu Val Val Phe Leu Val Ser Ser Gly Met Leu Ile  
 180 185 190

Val Ser Leu Tyr Thr His His Lys Lys Met Lys Val His Ser Ala Gly  
 195 200 205

Arg Arg Asp Val Arg Ala Lys Ala His Ile Thr Ala Leu Lys Ser Leu  
 210 215 220

Gly Cys Phe Leu Leu Leu His Leu Val Tyr Ile Met Ala Ser Pro Phe  
 225 230 235 240

Ser Ile Thr Ser Lys Thr Tyr Pro Pro Asp Leu Thr Ser Val Phe Ile  
 245 250 255

Trp Glu Thr Leu Met Ala Ala Tyr Pro Ser Leu His Ser Leu Ile Leu  
 260 265 270

Ile Met Gly Ile Pro Arg Val Lys Gln Thr Cys Gln Lys Ile Leu Trp  
 275 280 285

Lys Thr Val Cys Ala Arg Arg Cys Trp Gly Pro  
 290 295

<210> 75  
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 <212> DNA  
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&lt;222&gt; (881)..(881)

&lt;223&gt; SNP

&lt;400&gt; 75

atg	ctg	agc	gct	ggc	cta	gga	ctg	ctg	atg	ctg	gtg	gca	gtg	ggt	gaa	48
Met	Leu	Ser	Ala	Gly	Leu	Gly	Leu	Leu	Met	Leu	Val	Ala	Val	Val	Glu	
1				5					10					15		
ttt	ctc	atc	ggt	tta	att	gga	aat	gga	agc	ctg	gtg	gtc	tgg	agt	ttt	96
Phe	Leu	Ile	Gly	Leu	Ile	Gly	Asn	Gly	Ser	Leu	Val	Val	Trp	Ser	Phe	
			20					25					30			
aga	gaa	tgg	atc	aga	aaa	ttc	aac	tgg	tcc	tca	tat	aac	ctc	att	atc	144
Arg	Glu	Trp	Ile	Arg	Lys	Phe	Asn	Trp	Ser	Ser	Tyr	Asn	Leu	Ile	Ile	
		35					40					45				
ctg	ggc	ctg	gct	ggc	tgc	cga	ttt	tc	ctg	cag	tgg	ctg	atc	att	ttg	192
Leu	Gly	Leu	Ala	Gly	Cys	Arg	Phe	Leu	Leu	Gln	Trp	Leu	Ile	Ile	Leu	
	50					55				60						
gac	tta	agc	ttg	ttt	cca	ctt	ttc	cag	agc	agc	cgt	tgg	ctt	cgc	tat	240
Asp	Leu	Ser	Leu	Phe	Pro	Leu	Phe	Gln	Ser	Ser	Arg	Trp	Leu	Arg	Tyr	
65					70				75						80	
ctt	agt	atc	ttc	tgg	gtc	ctg	gta	agc	cag	gcc	agc	tta	tgg	ttt	gcc	288
Leu	Ser	Ile	Phe	Trp	Val	Leu	Val	Ser	Gln	Ala	Ser	Leu	Trp	Phe	Ala	
				85				90						95		
acc	ttc	ctc	agt	gtc	ttc	tat	tgc	aag	aag	atc	acg	acc	ttc	gat	cgc	336
Thr	Phe	Leu	Ser	Val	Phe	Tyr	Cys	Lys	Lys	Ile	Thr	Thr	Phe	Asp	Arg	
			100					105					110			
ccg	gcc	tac	ttg	tgg	ctg	aag	cag	agg	gcc	tat	aac	ctg	agt	ctc	tgg	384
Pro	Ala	Tyr	Leu	Trp	Leu	Lys	Gln	Arg	Ala	Tyr	Asn	Leu	Ser	Leu	Trp	
		115					120					125				
tgc	ctt	ctg	ggc	tac	ttt	ata	atc	aat	ttg	tta	ctt	aca	gtc	caa	att	432
Cys	Leu	Leu	Gly	Tyr	Phe	Ile	Ile	Asn	Leu	Leu	Leu	Thr	Val	Gln	Ile	
	130					135					140					
ggc	tta	aca	ttc	tat	cat	cct	ccc	caa	gga	aac	agc	agc	att	cgg	tat	480
Gly	Leu	Thr	Phe	Tyr	His	Pro	Pro	Gln	Gly	Asn	Ser	Ser	Ile	Arg	Tyr	
145					150				155						160	
ccc	ttt	gaa	agc	tgg	cag	tac	ctg	tat	gca	ttt	cag	ctc	aat	tca	gga	528
Pro	Phe	Glu	Ser	Trp	Gln	Tyr	Leu	Tyr	Ala	Phe	Gln	Leu	Asn	Ser	Gly	
				165				170					175			
agt	tat	ttg	cct	tta	gtg	gtg	ttt	ctt	gtt	tcc	tct	ggg	atg	ctg	att	576
Ser	Tyr	Leu	Pro	Leu	Val	Val	Phe	Leu	Val	Ser	Ser	Gly	Met	Leu	Ile	
			180					185					190			
gtc	tct	ttg	tat	aca	cac	cac	aag	aag	atg	aag	gtc	cat	tca	gct	ggt	624
Val	Ser	Leu	Tyr	Thr	His	His	Lys	Lys	Met	Lys	Val	His	Ser	Ala	Gly	
		195					200					205				
agg	agg	gat	gtc	cag	gcc	aag	gct	cac	atc	act	gcg	ctg	aag	tcc	ttg	672

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Arg Arg Asp Val Gln Ala Lys Ala His Ile Thr Ala Leu Lys Ser Leu  
 210 215 220  
 ggc tgc ttc ctc tta ctt cac ctg gtt tat atc atg gcc agc ccc ttc 720  
 Gly Cys Phe Leu Leu Leu His Leu Val Tyr Ile Met Ala Ser Pro Phe  
 225 230 235 240  
 tcc atc acc tcc aag act tat cct cct gat ctc acc agt gtc ttc atc 768  
 Ser Ile Thr Ser Lys Thr Tyr Pro Pro Asp Leu Thr Ser Val Phe Ile  
 245 250 255  
 tgg gag aca ctc atg gca gcc tat cct tct ctt cat tct ctc ata ttg 816  
 Trp Glu Thr Leu Met Ala Ala Tyr Pro Ser Leu His Ser Leu Ile Leu  
 260 265 270  
 atc atg ggg att cct agg gtg aag cag act tgt cag aag atc ctg tgg 864  
 Ile Met Gly Ile Pro Arg Val Lys Gln Thr Cys Gln Lys Ile Leu Trp  
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 Arg Glu Trp Ile Arg Lys Phe Asn Trp Ser Ser Tyr Asn Leu Ile Ile  
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 Leu Gly Leu Ala Gly Cys Arg Phe Leu Leu Gln Trp Leu Ile Ile Leu  
 50 55 60  
  
 Asp Leu Ser Leu Phe Pro Leu Phe Gln Ser Ser Arg Trp Leu Arg Tyr  
 65 70 75 80  
  
 Leu Ser Ile Phe Trp Val Leu Val Ser Gln Ala Ser Leu Trp Phe Ala  
 85 90 95  
  
 Thr Phe Leu Ser Val Phe Tyr Cys Lys Lys Ile Thr Thr Phe Asp Arg  
 100 105 110  
  
 Pro Ala Tyr Leu Trp Leu Lys Gln Arg Ala Tyr Asn Leu Ser Leu Trp  
 115 120 125

Cys Leu Leu Gly Tyr Phe Ile Ile Asn Leu Leu Leu Thr Val Gln Ile  
 130 135 140

Gly Leu Thr Phe Tyr His Pro Pro Gln Gly Asn Ser Ser Ile Arg Tyr  
 145 150 155 160

Pro Phe Glu Ser Trp Gln Tyr Leu Tyr Ala Phe Gln Leu Asn Ser Gly  
 165 170 175

Ser Tyr Leu Pro Leu Val Val Phe Leu Val Ser Ser Gly Met Leu Ile  
 180 185 190

Val Ser Leu Tyr Thr His His Lys Lys Met Lys Val His Ser Ala Gly  
 195 200 205

Arg Arg Asp Val Gln Ala Lys Ala His Ile Thr Ala Leu Lys Ser Leu  
 210 215 220

Gly Cys Phe Leu Leu Leu His Leu Val Tyr Ile Met Ala Ser Pro Phe  
 225 230 235 240

Ser Ile Thr Ser Lys Thr Tyr Pro Pro Asp Leu Thr Ser Val Phe Ile  
 245 250 255

Trp Glu Thr Leu Met Ala Ala Tyr Pro Ser Leu His Ser Leu Ile Leu  
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 Phe Leu Ile Gly Leu Ile Gly Asn Gly Ser Leu Val Val Trp Ser Phe  
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aga gaa tgg atc aga aaa ttc aac tgg tcc tca tat aac ctc att atc 144  
 Arg Glu Trp Ile Arg Lys Phe Asn Trp Ser Ser Tyr Asn Leu Ile Ile  
 35 40 45

ctg ggc ctg gct ggc tgc cga ttt ctc ctg cag tgg ctg atc att ttg 192  
 Leu Gly Leu Ala Gly Cys Arg Phe Leu Leu Gln Trp Leu Ile Ile Leu  
 50 55 60

gac tta agc ttg ttt cca ctt ttc cag agc agc cgt tgg ctt cgc tat 240  
 Asp Leu Ser Leu Phe Pro Leu Phe Gln Ser Ser Arg Trp Leu Arg Tyr  
 65 70 75 80

ctt agt atc ttc tgg gtc ctg gta agc cag gcc agc tta tgg ttt gcc 288  
 Leu Ser Ile Phe Trp Val Leu Val Ser Gln Ala Ser Leu Trp Phe Ala  
 85 90 95

acc ttc ctc agt gtc ttc tat tgc aag aag atc acg acc ttc gat cgc 336  
 Thr Phe Leu Ser Val Phe Tyr Cys Lys Lys Ile Thr Thr Phe Asp Arg  
 100 105 110

ccg gcc tac ttg tgg ctg aag cag agg gcc tat aac ctg agt ctc tgg 384  
 Pro Ala Tyr Leu Trp Leu Lys Gln Arg Ala Tyr Asn Leu Ser Leu Trp  
 115 120 125

tgc ctt ctg ggc tac ttt ata atc aat ttg tta ctt aca gtc caa att 432  
 Cys Leu Leu Gly Tyr Phe Ile Ile Asn Leu Leu Leu Thr Val Gln Ile  
 130 135 140

ggc tta aca ttc tat cat cct ccc caa gga aac agc agc att cgg tat 480  
 Gly Leu Thr Phe Tyr His Pro Pro Gln Gly Asn Ser Ser Ile Arg Tyr  
 145 150 155 160  
 ccc ttt gaa agc tgg cag tgc ctg tat gca ttt cag ctc aat tca gga 528  
 Pro Phe Glu Ser Trp Gln Cys Leu Tyr Ala Phe Gln Leu Asn Ser Gly  
 165 170 175  
 agt tat ttg cct tta gtg gtg ttt ctt gtt tcc tct ggg atg ctg att 576  
 Ser Tyr Leu Pro Leu Val Val Phe Leu Val Ser Ser Gly Met Leu Ile  
 180 185 190  
 gtc tct ttg tat aca cac cac aag aag atg aag gtc cat tca gct ggt 624  
 Val Ser Leu Tyr Thr His His Lys Lys Met Lys Val His Ser Ala Gly  
 195 200 205  
 agg agg gat gtc cgg gcc aag gct cac atc act gcg ctg aag tcc ttg 672  
 Arg Arg Asp Val Arg Ala Lys Ala His Ile Thr Ala Leu Lys Ser Leu  
 210 215 220  
 ggc tgc ttc ctc tta ctt cac ctg gtt tat atc atg gcc agc ccc ttc 720  
 Gly Cys Phe Leu Leu Leu His Leu Val Tyr Ile Met Ala Ser Pro Phe  
 225 230 235 240  
 tcc atc acc tcc aag act tat cct cct gat ctc acc agt gtc ttc atc 768  
 Ser Ile Thr Ser Lys Thr Tyr Pro Pro Asp Leu Thr Ser Val Phe Ile  
 245 250 255  
 tgg gag aca ctc atg gca gcc tat cct tct ctt cat tct ctc ata ttg 816  
 Trp Glu Thr Leu Met Ala Ala Tyr Pro Ser Leu His Ser Leu Ile Leu  
 260 265 270  
 atc atg ggg att cct agg gtg aag cag act tgt cag aag atc ctg tgg 864  
 Ile Met Gly Ile Pro Arg Val Lys Gln Thr Cys Gln Lys Ile Leu Trp  
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Arg Glu Trp Ile Arg Lys Phe Asn Trp Ser Ser Tyr Asn Leu Ile Ile  
 35 40 45

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Leu Gly Leu Ala Gly Cys Arg Phe Leu Leu Gln Trp Leu Ile Ile Leu  
 50 55 60

Asp Leu Ser Leu Phe Pro Leu Phe Gln Ser Ser Arg Trp Leu Arg Tyr  
 65 70 75 80

Leu Ser Ile Phe Trp Val Leu Val Ser Gln Ala Ser Leu Trp Phe Ala  
 85 90 95

Thr Phe Leu Ser Val Phe Tyr Cys Lys Lys Ile Thr Thr Phe Asp Arg  
 100 105 110

Pro Ala Tyr Leu Trp Leu Lys Gln Arg Ala Tyr Asn Leu Ser Leu Trp  
 115 120 125

Cys Leu Leu Gly Tyr Phe Ile Ile Asn Leu Leu Leu Thr Val Gln Ile  
 130 135 140

Gly Leu Thr Phe Tyr His Pro Pro Gln Gly Asn Ser Ser Ile Arg Tyr  
 145 150 155 160

Pro Phe Glu Ser Trp Gln Cys Leu Tyr Ala Phe Gln Leu Asn Ser Gly  
 165 170 175

Ser Tyr Leu Pro Leu Val Val Phe Leu Val Ser Ser Gly Met Leu Ile  
 180 185 190

Val Ser Leu Tyr Thr His His Lys Lys Met Lys Val His Ser Ala Gly  
 195 200 205

Arg Arg Asp Val Arg Ala Lys Ala His Ile Thr Ala Leu Lys Ser Leu  
 210 215 220

Gly Cys Phe Leu Leu Leu His Leu Val Tyr Ile Met Ala Ser Pro Phe  
 225 230 235 240

Ser Ile Thr Ser Lys Thr Tyr Pro Pro Asp Leu Thr Ser Val Phe Ile  
 245 250 255

Trp Glu Thr Leu Met Ala Ala Tyr Pro Ser Leu His Ser Leu Ile Leu  
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Lys Thr Val Cys Ala Arg Arg Cys Trp Gly Pro

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 Phe Leu Ile Gly Leu Ile Gly Asn Gly Ser Leu Val Val Trp Ser Phe  
 20 25 30  
 aga gaa tgg atc aga aaa ttc aac tgg tcc tca tat aac ctc att atc 144  
 Arg Glu Trp Ile Arg Lys Phe Asn Trp Ser Ser Tyr Asn Leu Ile Ile  
 35 40 45  
 ctg ggc ctg gct ggc tgc cga ttt ctc ctg cag tgg ctg atc att ttg 192  
 Leu Gly Leu Ala Gly Cys Arg Phe Leu Leu Gln Trp Leu Ile Ile Leu  
 50 55 60  
 gac tta agc ttg ttt cca ctt ttc cag agc agc cgt tgg ctt cgc tat 240

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Asp 65	Leu	Ser	Leu	Phe	Pro 70	Leu	Phe	Gln	Ser	Ser 75	Arg	Trp	Leu	Arg	Tyr 80	
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Leu	Ser	Ile	Phe	Trp 85	Val	Leu	Val	Ser	Gln 90	Ala	Ser	Leu	Trp	Phe 95	Ala	
acc	ttc	ctc	agt	gtc	ttc	tat	tgc	aag	aag	atc	acg	acc	ttc	gat	cgc	336
Thr	Phe	Leu	Ser 100	Val	Phe	Tyr	Cys	Lys 105	Lys	Ile	Thr	Thr	Phe 110	Asp	Arg	
ctg	gcc	tac	ttg	tgg	ctg	aag	cag	agg	gcc	tat	aac	ctg	agt	ctc	tgg	384
Leu	Ala	Tyr 115	Leu	Trp	Leu	Lys	Gln 120	Arg	Ala	Tyr	Asn	Leu	Ser	Leu	Trp	
tgc	ctt	ctg	ggc	tac	ttt	ata	atc	aat	ttg	tta	ctt	aca	gtc	caa	att	432
Cys	Leu	Leu	Gly	Tyr	Phe	Ile 135	Ile	Asn	Leu	Leu	Leu 140	Thr	Val	Gln	Ile	
ggc	tta	aca	ttc	tat	cat	cct	ccc	caa	gga	aac	agc	agc	att	cgg	tat	480
Gly	Leu	Thr	Phe	Tyr	His 150	Pro	Pro	Gln	Gly	Asn 155	Ser	Ser	Ile	Arg	Tyr 160	
ccc	ttt	gaa	agc	tgg	cag	tac	ctg	tat	gca	ttt	cag	ctc	aat	tca	gga	528
Pro	Phe	Glu	Ser 165	Trp	Gln	Tyr	Leu	Tyr	Ala 170	Phe	Gln	Leu	Asn	Ser 175	Gly	
agt	tat	ttg	cct	tta	gtg	gtg	ttt	ctt	gtt	tcc	tct	ggg	atg	ctg	att	576
Ser	Tyr	Leu	Pro 180	Leu	Val	Val	Phe	Leu 185	Val	Ser	Ser	Gly	Met 190	Leu	Ile	
gtc	tct	ttg	tat	aca	cac	cac	aag	aag	atg	aag	gtc	cat	tca	gct	ggc	624
Val	Ser	Leu 195	Tyr	Thr	His	His	Lys 200	Lys	Met	Lys	Val	His 205	Ser	Ala	Gly	
agg	agg	gat	gtc	cgg	gcc	aag	gct	cac	atc	act	gcg	ctg	aag	tcc	ttg	672
Arg	Arg	Asp 210	Val	Arg	Ala	Lys 215	Ala	His	Ile	Thr	Ala 220	Leu	Lys	Ser	Leu	
ggc	tgc	ttc	ctc	tta	ctt	cac	ctg	gtt	tat	atc	atg	gcc	agc	ccc	ttc	720
Gly	Cys	Phe	Leu	Leu	Leu 230	His	Leu	Val	Tyr	Ile 235	Met	Ala	Ser	Pro	Phe 240	
tcc	atc	acc	tcc	aag	act	tat	cct	cct	gat	ctc	acc	agt	gtc	ttc	atc	768
Ser	Ile	Thr	Ser 245	Lys	Thr	Tyr	Pro	Pro	Asp 250	Leu	Thr	Ser	Val	Phe 255	Ile	
tgg	gag	aca	ctc	atg	gca	gcc	tat	cct	tct	ctt	cat	tct	ctc	ata	ttg	816
Trp	Glu	Thr	Leu 260	Met	Ala	Ala	Tyr	Pro 265	Ser	Leu	His	Ser	Leu	Ile	Leu	
atc	atg	ggg	att	cct	agg	gtg	aag	cag	act	tgt	cag	aag	atc	ctg	tgg	864
Ile	Met	Gly 275	Ile	Pro	Arg	Val	Lys 280	Gln	Thr	Cys	Gln	Lys 285	Ile	Leu	Trp	
aag	aca	gtg	tgt	gct	cgg	aga	tgc	tgg	ggc	cca	tga					900
Lys	Thr	Val	Cys	Ala	Arg	Arg 295	Cys	Trp	Gly	Pro						
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Arg Glu Trp Ile Arg Lys Phe Asn Trp Ser Ser Tyr Asn Leu Ile Ile  
 35 40 45

Leu Gly Leu Ala Gly Cys Arg Phe Leu Leu Gln Trp Leu Ile Ile Leu  
 50 55 60

Asp Leu Ser Leu Phe Pro Leu Phe Gln Ser Ser Arg Trp Leu Arg Tyr  
 65 70 75 80

Leu Ser Ile Phe Trp Val Leu Val Ser Gln Ala Ser Leu Trp Phe Ala  
 85 90 95

Thr Phe Leu Ser Val Phe Tyr Cys Lys Lys Ile Thr Thr Phe Asp Arg  
 100 105 110

Leu Ala Tyr Leu Trp Leu Lys Gln Arg Ala Tyr Asn Leu Ser Leu Trp  
 115 120 125

Cys Leu Leu Gly Tyr Phe Ile Ile Asn Leu Leu Leu Thr Val Gln Ile  
 130 135 140

Gly Leu Thr Phe Tyr His Pro Pro Gln Gly Asn Ser Ser Ile Arg Tyr  
 145 150 155 160

Pro Phe Glu Ser Trp Gln Tyr Leu Tyr Ala Phe Gln Leu Asn Ser Gly  
 165 170 175

Ser Tyr Leu Pro Leu Val Val Phe Leu Val Ser Ser Gly Met Leu Ile  
 180 185 190

Val Ser Leu Tyr Thr His His Lys Lys Met Lys Val His Ser Ala Gly  
 195 200 205

Arg Arg Asp Val Arg Ala Lys Ala His Ile Thr Ala Leu Lys Ser Leu  
 210 215 220

Gly Cys Phe Leu Leu Leu His Leu Val Tyr Ile Met Ala Ser Pro Phe  
 225 230 235 240

Ser Ile Thr Ser Lys Thr Tyr Pro Pro Asp Leu Thr Ser Val Phe Ile  
 245 250 255

Trp Glu Thr Leu Met Ala Ala Tyr Pro Ser Leu His Ser Leu Ile Leu  
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tgg gag aca ctc atg gca gcc tat cct tct ctt cat tct ctc ata ttg 816  
 Trp Glu Thr Leu Met Ala Ala Tyr Pro Ser Leu His Ser Leu Ile Leu  
                   260                                  265                                  270

atc atg ggg att cct agg gtg aag cag act tgt cag aag atc ctg tgg 864  
 Ile Met Gly Ile Pro Arg Val Lys Gln Thr Cys Gln Lys Ile Leu Trp  
                   275                                  280                                  285

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 Lys Thr Val Cys Ala Arg Arg Cys Trp Gly Pro  
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                   20                                  25                                  30

Arg Glu Trp Ile Arg Lys Phe Asn Trp Ser Ser Tyr Asn Leu Ile Ile  
                   35                                  40                                  45

Leu Gly Leu Ala Gly Cys Arg Phe Leu Leu Gln Trp Leu Ile Ile Leu  
                   50                                  55                                  60

Asp Leu Ser Leu Phe Pro Leu Phe Gln Ser Ser Arg Trp Leu Arg Tyr  
 65                                  70                                  75                                  80

Leu Ser Ile Phe Trp Val Leu Val Ser Gln Ala Ser Leu Trp Phe Ala  
                   85                                  90                                  95

Thr Phe Leu Ser Val Phe Tyr Cys Lys Lys Ile Thr Thr Phe Asp Arg  
                   100                                  105                                  110

Pro Ala Tyr Leu Trp Leu Lys Gln Arg Ala Tyr Asn Leu Ser Leu Trp  
                   115                                  120                                  125

Cys Leu Leu Gly Tyr Phe Ile Ile Asn Leu Leu Leu Thr Val Gln Ile  
                   130                                  135                                  140

Gly Leu Thr Phe Tyr His Pro Pro Gln Gly Asn Ser Ser Ile Arg Tyr

145                      150                      155                      160  
 Pro Phe Glu Ser Trp Gln Tyr Leu Tyr Ala Phe Gln Leu Asn Ser Gly  
                                  165                                   170                                   175  
 Ser Tyr Leu Pro Leu Val Val Phe Leu Val Ser Ser Gly Met Leu Ile  
                                  180                                   185                                   190  
 Val Ser Leu Tyr Thr His His Lys Lys Met Lys Val His Ser Ala Gly  
                                  195                                   200                                   205  
 Arg Arg Asp Val Arg Ala Lys Ala His Ile Thr Ala Leu Lys Ser Leu  
                                  210                                   215                                   220  
 Gly Cys Phe Leu Leu Leu His Leu Val Tyr Ile Met Ala Ser Pro Phe  
                                  225                                   230                                   235                                   240  
 Ser Ile Thr Ser Lys Thr Tyr Pro Pro Asp Leu Thr Ser Val Phe Ile  
                                  245                                   250                                   255  
 Trp Glu Thr Leu Met Ala Ala Tyr Pro Ser Leu His Ser Leu Ile Leu  
                                  260                                   265                                   270  
 Ile Met Gly Ile Pro Arg Val Lys Gln Thr Cys Gln Lys Ile Leu Trp  
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 Lys Thr Val Cys Ala Arg Arg Cys Trp Gly Pro  
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ttt ctc atc ggt tta att gga aat gga atc ctg gtg gtc tgg agt ttt	96
Phe Leu Ile Gly Leu Ile Gly Asn Gly Ile Leu Val Val Trp Ser Phe	
20 25 30	
aga gaa tgg atc aga aaa ttc aac tgg tcc tca tat aac ctc att atc	144
Arg Glu Trp Ile Arg Lys Phe Asn Trp Ser Ser Tyr Asn Leu Ile Ile	
35 40 45	
ctg ggc ctg gct ggc tgc cga ttt ctc ctg cag tgg ctg atc att ttg	192
Leu Gly Leu Ala Gly Cys Arg Phe Leu Leu Gln Trp Leu Ile Ile Leu	
50 55 60	
gac tta agc ttg ttt cca ctt ttc cag agc agc cgt tgg ctt cgc tat	240
Asp Leu Ser Leu Phe Pro Leu Phe Gln Ser Ser Arg Trp Leu Arg Tyr	
65 70 75 80	
ctt agt atc ttc tgg gtc ctg gta agc cag gcc agc tta tgg ttt gcc	288
Leu Ser Ile Phe Trp Val Leu Val Ser Gln Ala Ser Leu Trp Phe Ala	
85 90 95	
acc ttc ctc agt gtc ttc tat tgc aag aag atc acg acc ttc gat cgc	336
Thr Phe Leu Ser Val Phe Tyr Cys Lys Lys Ile Thr Thr Phe Asp Arg	
100 105 110	
cag gcc tac ttg tgg ctg aag cag agg gcc tat aac ctg agt ctc tgg	384
Pro Ala Tyr Leu Trp Leu Lys Gln Arg Ala Tyr Asn Leu Ser Leu Trp	
115 120 125	
tgc ctt ctg ggc tac ttt ata atc aat ttg tta ctt aca gtc caa att	432
Cys Leu Leu Gly Tyr Phe Ile Ile Asn Leu Leu Thr Val Gln Ile	
130 135 140	
ggc tta aca ttc tat cat cct ccc caa gga aac agc agc att cgg tat	480

Gly Leu Thr Phe Tyr His Pro Pro Gln Gly Asn Ser Ser Ile Arg Tyr  
 145 150 155 160  
 ccc ttt gaa agc tgg cag tac ctg tat gca ttt cag ctc aat tca gga 528  
 Pro Phe Glu Ser Trp Gln Tyr Leu Tyr Ala Phe Gln Leu Asn Ser Gly  
 165 170 175  
 agt tat ttg cct tta gtg gtg ttt ctt gtt tcc tct ggg atg ctg att 576  
 Ser Tyr Leu Pro Leu Val Val Phe Leu Val Ser Ser Gly Met Leu Ile  
 180 185 190  
 gtc tct ttg tat aca cac cac aag aag atg aag gtc cat tca gct ggt 624  
 Val Ser Leu Tyr Thr His His Lys Lys Met Lys Val His Ser Ala Gly  
 195 200 205  
 agg agg gat gtc cgg gcc aag gct cac atc act gcg ctg aag tcc ttg 672  
 Arg Arg Asp Val Arg Ala Lys Ala His Ile Thr Ala Leu Lys Ser Leu  
 210 215 220  
 ggc tgc ttc ctc tta ctt cac ctg gtt tat atc atg gcc agc ccc ttc 720  
 Gly Cys Phe Leu Leu Leu His Leu Val Tyr Ile Met Ala Ser Pro Phe  
 225 230 235 240  
 tcc atc acc tcc aag act tat cct cct gat ctc acc agt gtc ttc atc 768  
 Ser Ile Thr Ser Lys Thr Tyr Pro Pro Asp Leu Thr Ser Val Phe Ile  
 245 250 255  
 tgg gag aca ctc atg gca gcc tat cct tct ctt cat tct ctc ata ttg 816  
 Trp Glu Thr Leu Met Ala Ala Tyr Pro Ser Leu His Ser Leu Ile Leu  
 260 265 270  
 atc atg ggg att cct agg gtg aag cag act tgt cag aag atc ctg tgg 864  
 Ile Met Gly Ile Pro Arg Val Lys Gln Thr Cys Gln Lys Ile Leu Trp  
 275 280 285  
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 Lys Thr Val Cys Ala Leu Arg Cys Trp Gly Pro  
 290 295

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<400> 84

Met Leu Ser Ala Gly Leu Gly Leu Leu Met Leu Val Ala Val Val Glu  
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 Phe Leu Ile Gly Leu Ile Gly Asn Gly Ile Leu Val Val Trp Ser Phe  
 20 25 30  
 Arg Glu Trp Ile Arg Lys Phe Asn Trp Ser Ser Tyr Asn Leu Ile Ile  
 35 40 45  
 Leu Gly Leu Ala Gly Cys Arg Phe Leu Leu Gln Trp Leu Ile Ile Leu  
 50 55 60

Asp Leu Ser Leu Phe Pro Leu Phe Gln Ser Ser Arg Trp Leu Arg Tyr  
 65 70 75 80  
 Leu Ser Ile Phe Trp Val Leu Val Ser Gln Ala Ser Leu Trp Phe Ala  
 85 90 95  
 Thr Phe Leu Ser Val Phe Tyr Cys Lys Lys Ile Thr Thr Phe Asp Arg  
 100 105 110  
 Pro Ala Tyr Leu Trp Leu Lys Gln Arg Ala Tyr Asn Leu Ser Leu Trp  
 115 120 125  
 Cys Leu Leu Gly Tyr Phe Ile Ile Asn Leu Leu Leu Thr Val Gln Ile  
 130 135 140  
 Gly Leu Thr Phe Tyr His Pro Pro Gln Gly Asn Ser Ser Ile Arg Tyr  
 145 150 155 160  
 Pro Phe Glu Ser Trp Gln Tyr Leu Tyr Ala Phe Gln Leu Asn Ser Gly  
 165 170 175  
 Ser Tyr Leu Pro Leu Val Val Phe Leu Val Ser Ser Gly Met Leu Ile  
 180 185 190  
 Val Ser Leu Tyr Thr His His Lys Lys Met Lys Val His Ser Ala Gly  
 195 200 205  
 Arg Arg Asp Val Arg Ala Lys Ala His Ile Thr Ala Leu Lys Ser Leu  
 210 215 220  
 Gly Cys Phe Leu Leu Leu His Leu Val Tyr Ile Met Ala Ser Pro Phe  
 225 230 235 240  
 Ser Ile Thr Ser Lys Thr Tyr Pro Pro Asp Leu Thr Ser Val Phe Ile  
 245 250 255  
 Trp Glu Thr Leu Met Ala Ala Tyr Pro Ser Leu His Ser Leu Ile Leu  
 260 265 270  
 Ile Met Gly Ile Pro Arg Val Lys Gln Thr Cys Gln Lys Ile Leu Trp  
 275 280 285  
 Lys Thr Val Cys Ala Leu Arg Cys Trp Gly Pro  
 290 295

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Met Leu Ser Ala Gly Leu Gly Leu Leu Met Leu Val Ala Val Val Glu	
1 5 10 15	
ttt ctc atc ggt tta att gga aat gga atc ctg gtg gtc tgg agt ttt	96
Phe Leu Ile Gly Leu Ile Gly Asn Gly Ile Leu Val Val Trp Ser Phe	
20 25 30	
aga gaa tgg atc aga aaa ttc aac tgg tcc tca tat aac ctc att atc	144
Arg Glu Trp Ile Arg Lys Phe Asn Trp Ser Ser Tyr Asn Leu Ile Ile	
35 40 45	
ctg ggc ctg gct ggc tgc cga ttt ctc ctg cag tgg ctg atc att ttg	192
Leu Gly Leu Ala Gly Cys Arg Phe Leu Leu Gln Trp Leu Ile Ile Leu	
50 55 60	
gac tta agc ttg ttt cca ctt ttc cag agc agc cgt tgg ctt tgc tat	240
Asp Leu Ser Leu Phe Pro Leu Phe Gln Ser Ser Arg Trp Leu Cys Tyr	
65 70 75 80	

ctt agt atc ttc tgg gtc ctg gta agc cag gcc agc tta tgg ttt gcc Leu Ser Ile Phe Trp Val Leu Val Ser Gln Ala Ser Leu Trp Phe Ala 85 90 95	288
acc ttc ctc agt gtc ttc tat tgc aag aag atc acg acc ttc gat cgc Thr Phe Leu Ser Val Phe Tyr Cys Lys Lys Ile Thr Thr Phe Asp Arg 100 105 110	336
ctg gcc tac ttg tgg ctg aag cag agg gcc tat aac ctg agt ctc tgg Leu Ala Tyr Leu Trp Leu Lys Gln Arg Ala Tyr Asn Leu Ser Leu Trp 115 120 125	384
tgc ctt ctg ggc tac ttt ata atc aat ttg tta ctt aca gtc caa att Cys Leu Leu Gly Tyr Phe Ile Ile Asn Leu Leu Leu Thr Val Gln Ile 130 135 140	432
ggc tta aca ttc tat cat cct ccc caa gga aac agc agc att cgg tat Gly Leu Thr Phe Tyr His Pro Pro Gln Gly Asn Ser Ser Ile Arg Tyr 145 150 155 160	480
ccc ttt gaa agc tgg cag tac ctg tat gca ttt cag ctc aat tca gga Pro Phe Glu Ser Trp Gln Tyr Leu Tyr Ala Phe Gln Leu Asn Ser Gly 165 170 175	528
agt tat ttg cct tta gtg gtg ttt ctt gtt tcc tct ggg atg ctg att Ser Tyr Leu Pro Leu Val Val Phe Leu Val Ser Ser Gly Met Leu Ile 180 185 190	576
gtc tct ttg tat aca cac cac aag aag atg aag gtc cat tca gct ggt Val Ser Leu Tyr Thr His His Lys Lys Met Lys Val His Ser Ala Gly 195 200 205	624
agg agg gat gtc cgg gcc aag gct cac atc act gcg ctg aag tcc ttg Arg Arg Asp Val Arg Ala Lys Ala His Ile Thr Ala Leu Lys Ser Leu 210 215 220	672
ggc tgc ttc ctc tta ctt cac ctg gtt tat atc atg gcc agc ccc ttc Gly Cys Phe Leu Leu Leu His Leu Val Tyr Ile Met Ala Ser Pro Phe 225 230 235 240	720
tcc atc acc tcc aag act tat cct cct gat ctc acc agt gtc ttc atc Ser Ile Thr Ser Lys Thr Tyr Pro Pro Asp Leu Thr Ser Val Phe Ile 245 250 255	768
tgg gag aca ctc atg gca gcc tat cct tct ctt cat tct ctc ata ttg Trp Glu Thr Leu Met Ala Ala Tyr Pro Ser Leu His Ser Leu Ile Leu 260 265 270	816
atc atg ggg att cct agg gtg aag cag act tgt cag aag atc ctg tgg Ile Met Gly Ile Pro Arg Val Lys Gln Thr Cys Gln Lys Ile Leu Trp 275 280 285	864
aag aca gtg tgt gct cgg aga tgc tgg ggc cca tga Lys Thr Val Cys Ala Arg Arg Cys Trp Gly Pro 290 295	900

&lt;210&gt; 86

&lt;211&gt; 299

&lt;212&gt; PRT

&lt;213&gt; homo sapiens

&lt;400&gt; 86

Met Leu Ser Ala Gly Leu Gly Leu Leu Met Leu Val Ala Val Val Glu  
 1 5 10 15

Phe Leu Ile Gly Leu Ile Gly Asn Gly Ile Leu Val Val Trp Ser Phe  
 20 25 30

Arg Glu Trp Ile Arg Lys Phe Asn Trp Ser Ser Tyr Asn Leu Ile Ile  
 35 40 45

Leu Gly Leu Ala Gly Cys Arg Phe Leu Leu Gln Trp Leu Ile Ile Leu  
 50 55 60

Asp Leu Ser Leu Phe Pro Leu Phe Gln Ser Ser Arg Trp Leu Cys Tyr  
 65 70 75 80

Leu Ser Ile Phe Trp Val Leu Val Ser Gln Ala Ser Leu Trp Phe Ala  
 85 90 95

Thr Phe Leu Ser Val Phe Tyr Cys Lys Lys Ile Thr Thr Phe Asp Arg  
 100 105 110

Leu Ala Tyr Leu Trp Leu Lys Gln Arg Ala Tyr Asn Leu Ser Leu Trp  
 115 120 125

Cys Leu Leu Gly Tyr Phe Ile Ile Asn Leu Leu Leu Thr Val Gln Ile  
 130 135 140

Gly Leu Thr Phe Tyr His Pro Pro Gln Gly Asn Ser Ser Ile Arg Tyr  
 145 150 155 160

Pro Phe Glu Ser Trp Gln Tyr Leu Tyr Ala Phe Gln Leu Asn Ser Gly  
 165 170 175

Ser Tyr Leu Pro Leu Val Val Phe Leu Val Ser Ser Gly Met Leu Ile  
 180 185 190

Val Ser Leu Tyr Thr His His Lys Lys Met Lys Val His Ser Ala Gly  
 195 200 205

Arg Arg Asp Val Arg Ala Lys Ala His Ile Thr Ala Leu Lys Ser Leu  
 210 215 220

Gly Cys Phe Leu Leu Leu His Leu Val Tyr Ile Met Ala Ser Pro Phe



225                      230                      235                      240  
 Ser Ile Thr Ser Lys Thr Tyr Pro Pro Asp Leu Thr Ser Val Phe Ile  
                                  245                      250                      255  
 Trp Glu Thr Leu Met Ala Ala Tyr Pro Ser Leu His Ser Leu Ile Leu  
                                  260                      265                      270  
 Ile Met Gly Ile Pro Arg Val Lys Gln Thr Cys Gln Lys Ile Leu Trp  
                                  275                      280                      285  
 Lys Thr Val Cys Ala Arg Arg Cys Trp Gly Pro  
                                  290                      295

<210> 87  
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Met	Ala	Asp	Lys	Val	Gln	Thr	Thr	Leu	Leu	Phe	Leu	Ala	Val	Gly	Glu	
1				5					10					15		
ttt	tca	gtg	ggg	atc	tta	ggg	aat	gca	ttc	att	gga	ttg	gta	aac	tgc	96
Phe	Ser	Val	Gly	Ile	Leu	Gly	Asn	Ala	Phe	Ile	Gly	Leu	Val	Asn	Cys	
			20					25					30			
atg	gac	tgg	gtc	aag	aag	agg	aaa	att	gcc	tcc	att	gat	tta	atc	ctc	144
Met	Asp	Trp	Val	Lys	Lys	Arg	Lys	Ile	Ala	Ser	Ile	Asp	Leu	Ile	Leu	
		35					40					45				
aca	agt	ctg	gcc	ata	tcc	aga	att	tgt	cta	ttg	tgc	gta	ata	cta	tta	192
Thr	Ser	Leu	Ala	Ile	Ser	Arg	Ile	Cys	Leu	Leu	Cys	Val	Ile	Leu	Leu	
		50				55					60					
gat	tgt	ttt	ata	ttg	gtg	cta	tat	cca	gat	gtc	tat	gcc	act	ggg	aaa	240
Asp	Cys	Phe	Ile	Leu	Val	Leu	Tyr	Pro	Asp	Val	Tyr	Ala	Thr	Gly	Lys	
65					70					75				80		
gaa	atg	aga	atc	att	gac	ttc	ttc	tgg	aca	cta	acc	aat	cat	tta	agt	288
Glu	Met	Arg	Ile	Ile	Asp	Phe	Phe	Trp	Thr	Leu	Thr	Asn	His	Leu	Ser	
				85					90					95		
atc	tgg	ttt	gca	acc	tgc	ctc	agc	att	tac	tat	ttc	ttc	aag	ata	ggg	336
Ile	Trp	Phe	Ala	Thr	Cys	Leu	Ser	Ile	Tyr	Tyr	Phe	Phe	Lys	Ile	Gly	
			100					105					110			
aat	ttc	ttt	cac	cca	ctt	ttc	ctc	tgg	atg	aag	tgg	aga	att	gac	agg	384
Asn	Phe	Phe	His	Pro	Leu	Phe	Leu	Trp	Met	Lys	Trp	Arg	Ile	Asp	Arg	
			115				120					125				
gtg	att	tcc	tgg	att	cta	ctg	ggg	tgc	gtg	gtt	ctc	tct	gtg	ttt	att	432
Val	Ile	Ser	Trp	Ile	Leu	Leu	Gly	Cys	Val	Val	Leu	Ser	Val	Phe	Ile	
		130				135					140					
agc	ctt	cca	gcc	act	gag	aat	ttg	aac	gct	gat	ttc	agg	ttt	tgt	gtg	480
Ser	Leu	Pro	Ala	Thr	Glu	Asn	Leu	Asn	Ala	Asp	Phe	Arg	Phe	Cys	Val	
145					150					155				160		
aag	gca	aag	agg	aaa	aca	aac	tta	act	tgg	agt	tgc	aga	gta	aat	aaa	528
Lys	Ala	Lys	Arg	Lys	Thr	Asn	Leu	Thr	Trp	Ser	Cys	Arg	Val	Asn	Lys	
				165					170				175			
act	caa	cat	gct	tct	acc	aag	tta	ttt	ctc	aac	ctg	gca	acg	ctg	ctc	576
Thr	Gln	His	Ala	Ser	Thr	Lys	Leu	Phe	Leu	Asn	Leu	Ala	Thr	Leu	Leu	
			180					185					190			
ccc	ttt	tgt	gtg	tgc	cta	atg	tcc	ttt	ttc	ctc	ttg	atc	ctc	tcc	ctg	624
Pro	Phe	Cys	Val	Cys	Leu	Met	Ser	Phe	Phe	Leu	Leu	Ile	Leu	Ser	Leu	
		195					200					205				
cgg	aga	cat	atc	agg	cga	atg	cag	ctc	agt	gcc	aca	ggg	tgc	aga	gac	672
Arg	Arg	His	Ile	Arg	Arg	Met	Gln	Leu	Ser	Ala	Thr	Gly	Cys	Arg	Asp	
		210				215					220					
ccc	agc	aca	gaa	gcc	cat	gtg	aga	gcc	ctg	aaa	gct	gtc	att	tcc	ttc	720
Pro	Ser	Thr	Glu	Ala	His	Val	Arg	Ala	Leu	Lys	Ala	Val	Ile	Ser	Phe	
225					230					235				240		
ctt	ctc	ctc	ttt	att	gcc	tac	tat	ttg	tcc	ttt	ctc	att	gcc	acc	tcc	768
Leu	Leu	Leu	Phe	Ile	Ala	Tyr	Tyr	Leu	Ser	Phe	Leu	Ile	Ala	Thr	Ser	

245					250					255						
agc	tac	ttt	atg	cca	gag	acg	gaa	tta	gct	gtg	att	ttt	ggg	gag	tcc	816
Ser	Tyr	Phe	Met	Pro	Glu	Thr	Glu	Leu	Ala	Val	Ile	Phe	Gly	Glu	Ser	
			260					265					270			
ata	gct	cta	atc	tac	ccc	tca	agt	cat	tca	ttt	atc	cta	ata	ctg	ggg	864
Ile	Ala	Leu	Ile	Tyr	Pro	Ser	Ser	His	Ser	Phe	Ile	Leu	Ile	Leu	Gly	
			275					280					285			
aac	aat	aaa	tta	aga	cat	gca	tct	cta	aag	gtg	att	tgg	aaa	gta	atg	912
Asn	Asn	Lys	Leu	Arg	His	Ala	Ser	Leu	Lys	Val	Ile	Trp	Lys	Val	Met	
			290					295					300			
tct	att	cta	aaa	gga	aga	aaa	ttc	caa	caa	cat	aaa	caa	atc	tga		957
Ser	Ile	Leu	Lys	Gly	Arg	Lys	Phe	Gln	Gln	His	Lys	Gln	Ile			
			305					310					315			

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<400> 88

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Phe	Ser	Val	Gly	Ile	Leu	Gly	Asn	Ala	Phe	Ile	Gly	Leu	Val	Asn	Cys
			20					25					30		
Met	Asp	Trp	Val	Lys	Lys	Arg	Lys	Ile	Ala	Ser	Ile	Asp	Leu	Ile	Leu
			35				40					45			
Thr	Ser	Leu	Ala	Ile	Ser	Arg	Ile	Cys	Leu	Leu	Cys	Val	Ile	Leu	Leu
			50			55					60				
Asp	Cys	Phe	Ile	Leu	Val	Leu	Tyr	Pro	Asp	Val	Tyr	Ala	Thr	Gly	Lys
65					70				75					80	
Glu	Met	Arg	Ile	Ile	Asp	Phe	Phe	Trp	Thr	Leu	Thr	Asn	His	Leu	Ser
			85						90					95	
Ile	Trp	Phe	Ala	Thr	Cys	Leu	Ser	Ile	Tyr	Tyr	Phe	Phe	Lys	Ile	Gly
			100					105					110		
Asn	Phe	Phe	His	Pro	Leu	Phe	Leu	Trp	Met	Lys	Trp	Arg	Ile	Asp	Arg
			115				120					125			
Val	Ile	Ser	Trp	Ile	Leu	Leu	Gly	Cys	Val	Val	Leu	Ser	Val	Phe	Ile
			130				135					140			

Ser Leu Pro Ala Thr Glu Asn Leu Asn Ala Asp Phe Arg Phe Cys Val  
 145 150 155 160

Lys Ala Lys Arg Lys Thr Asn Leu Thr Trp Ser Cys Arg Val Asn Lys  
 165 170 175

Thr Gln His Ala Ser Thr Lys Leu Phe Leu Asn Leu Ala Thr Leu Leu  
 180 185 190

Pro Phe Cys Val Cys Leu Met Ser Phe Phe Leu Leu Ile Leu Ser Leu  
 195 200 205

Arg Arg His Ile Arg Arg Met Gln Leu Ser Ala Thr Gly Cys Arg Asp  
 210 215 220

Pro Ser Thr Glu Ala His Val Arg Ala Leu Lys Ala Val Ile Ser Phe  
 225 230 235 240

Leu Leu Leu Phe Ile Ala Tyr Tyr Leu Ser Phe Leu Ile Ala Thr Ser  
 245 250 255

Ser Tyr Phe Met Pro Glu Thr Glu Leu Ala Val Ile Phe Gly Glu Ser  
 260 265 270

Ile Ala Leu Ile Tyr Pro Ser Ser His Ser Phe Ile Leu Ile Leu Gly  
 275 280 285

Asn Asn Lys Leu Arg His Ala Ser Leu Lys Val Ile Trp Lys Val Met  
 290 295 300

Ser Ile Leu Lys Gly Arg Lys Phe Gln Gln His Lys Gln Ile  
 305 310 315

<210> 89  
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Met Ala Asp Lys Val Gln Thr Thr Leu Leu Phe Leu Ala Val Gly Glu	
1 5 10 15	
ttt tca gtg ggg atc tta ggg aat gca ttc att gga ttg gta aac tgc	96
Phe Ser Val Gly Ile Leu Gly Asn Ala Phe Ile Gly Leu Val Asn Cys	
20 25 30	
atg gac tgg gtc aag aag agg aaa att gcc tcc att gat tta atc ctc	144
Met Asp Trp Val Lys Lys Arg Lys Ile Ala Ser Ile Asp Leu Ile Leu	
35 40 45	
aca agt ctg gcc ata tcc aga att tgt cta ttg tgc gta ata cta tta	192
Thr Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Leu Leu	
50 55 60	
gat tgt ttt ata ttg gtg cta tat cca gat gtc tat gcc act ggt aaa	240
Asp Cys Phe Ile Leu Val Leu Tyr Pro Asp Val Tyr Ala Thr Gly Lys	
65 70 75 80	
gaa atg aga atc att gac ttc ttc tgg aca cta acc aat cat tta agt	288
Glu Met Arg Ile Ile Asp Phe Phe Trp Thr Leu Thr Asn His Leu Ser	
85 90 95	
atc tgg ttt gca acc tgc ctc agc att tac tat ttc ttc aag ata ggt	336
Ile Trp Phe Ala Thr Cys Leu Ser Ile Tyr Tyr Phe Phe Lys Ile Gly	
100 105 110	
aat ttc ttt cac cca ctt ttc ctc tgg atg aag tgg aga att gac agg	384
Asn Phe Phe His Pro Leu Phe Leu Trp Met Lys Trp Arg Ile Asp Arg	
115 120 125	
gtg att tcc tgg att cta ctg ggg tgc gtg gtt ctc tct gtg ttt att	432
Val Ile Ser Trp Ile Leu Leu Gly Cys Val Val Leu Ser Val Phe Ile	
130 135 140	

agc ctt cca gcc act gag aat ttg aac gct gat ttc agg ttt tgt gtg 480  
 Ser Leu Pro Ala Thr Glu Asn Leu Asn Ala Asp Phe Arg Phe Cys Val  
 145 150 155 160

aag gca aag agg aaa aca aac tta act tgg agt tgc aga gta aat aaa 528  
 Lys Ala Lys Arg Lys Thr Asn Leu Thr Trp Ser Cys Arg Val Asn Lys  
 165 170 175

act caa cat gct tct acc aag tta ttt ctc aac ctg gca acg ctg ctc 576  
 Thr Gln His Ala Ser Thr Lys Leu Phe Leu Asn Leu Ala Thr Leu Leu  
 180 185 190

ccc ttt tgt gtg tgc cta atg tcc ttt ttc ctc ttg atc ctc tcc ctg 624  
 Pro Phe Cys Val Cys Leu Met Ser Phe Phe Leu Leu Ile Leu Ser Leu  
 195 200 205

cgg aga cat atc agg cga atg cag ctc agt gcc aca ggg tgc aga gac 672  
 Arg Arg His Ile Arg Arg Met Gln Leu Ser Ala Thr Gly Cys Arg Asp  
 210 215 220

ccc agc aca gaa gcc cat gtg aga gcc ctg aaa gct gtc att tcc ttc 720  
 Pro Ser Thr Glu Ala His Val Arg Ala Leu Lys Ala Val Ile Ser Phe  
 225 230 235 240

ctt ctc ctc ttt att gcc tac tat ttg tcc ttt ctc att gcc acc tcc 768  
 Leu Leu Leu Phe Ile Ala Tyr Tyr Leu Ser Phe Leu Ile Ala Thr Ser  
 245 250 255

agc tac ttt atg cca gag acg gaa tta gct gtg att ttt ggt gag tcc 816  
 Ser Tyr Phe Met Pro Glu Thr Glu Leu Ala Val Ile Phe Gly Glu Ser  
 260 265 270

ata gct cta atc tac ccc tca agt cat tca ttt atc cta ata ctg ggg 864  
 Ile Ala Leu Ile Tyr Pro Ser Ser His Ser Phe Ile Leu Ile Leu Gly  
 275 280 285

aac aat aaa tta aga cat gca tct cta aag gtg att tgg aaa gta ata 912  
 Asn Asn Lys Leu Arg His Ala Ser Leu Lys Val Ile Trp Lys Val Ile  
 290 295 300

tct att cta aaa gga aga aaa ttc caa caa cat aaa caa atc tga 957  
 Ser Ile Leu Lys Gly Arg Lys Phe Gln Gln His Lys Gln Ile  
 305 310 315

<210> 90  
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 <400> 90

Met Ala Asp Lys Val Gln Thr Thr Leu Leu Phe Leu Ala Val Gly Glu  
 1 5 10 15

Phe Ser Val Gly Ile Leu Gly Asn Ala Phe Ile Gly Leu Val Asn Cys  
 20 25 30

Met Asp Trp Val Lys Lys Arg Lys Ile Ala Ser Ile Asp Leu Ile Leu

35

40

45

Thr Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Leu Leu  
 50 55 60

Asp Cys Phe Ile Leu Val Leu Tyr Pro Asp Val Tyr Ala Thr Gly Lys  
 65 70 75 80

Glu Met Arg Ile Ile Asp Phe Phe Trp Thr Leu Thr Asn His Leu Ser  
 85 90 95

Ile Trp Phe Ala Thr Cys Leu Ser Ile Tyr Tyr Phe Phe Lys Ile Gly  
 100 105 110

Asn Phe Phe His Pro Leu Phe Leu Trp Met Lys Trp Arg Ile Asp Arg  
 115 120 125

Val Ile Ser Trp Ile Leu Leu Gly Cys Val Val Leu Ser Val Phe Ile  
 130 135 140

Ser Leu Pro Ala Thr Glu Asn Leu Asn Ala Asp Phe Arg Phe Cys Val  
 145 150 155 160

Lys Ala Lys Arg Lys Thr Asn Leu Thr Trp Ser Cys Arg Val Asn Lys  
 165 170 175

Thr Gln His Ala Ser Thr Lys Leu Phe Leu Asn Leu Ala Thr Leu Leu  
 180 185 190

Pro Phe Cys Val Cys Leu Met Ser Phe Phe Leu Leu Ile Leu Ser Leu  
 195 200 205

Arg Arg His Ile Arg Arg Met Gln Leu Ser Ala Thr Gly Cys Arg Asp  
 210 215 220

Pro Ser Thr Glu Ala His Val Arg Ala Leu Lys Ala Val Ile Ser Phe  
 225 230 235 240

Leu Leu Leu Phe Ile Ala Tyr Tyr Leu Ser Phe Leu Ile Ala Thr Ser  
 245 250 255

Ser Tyr Phe Met Pro Glu Thr Glu Leu Ala Val Ile Phe Gly Glu Ser  
 260 265 270

Ile Ala Leu Ile Tyr Pro Ser Ser His Ser Phe Ile Leu Ile Leu Gly  
 275 280 285

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Thr	Ser	Leu	Ala	Ile	Ser	Arg	Ile	Cys	Leu	Leu	Cys	Val	Ile	Leu	Leu	
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gat	tgt	ttt	ata	ttg	gtg	cta	tat	cca	gat	gtc	tat	gcc	act	ggg	aaa	240
Asp	Cys	Phe	Ile	Leu	Val	Leu	Tyr	Pro	Asp	Val	Tyr	Ala	Thr	Gly	Lys	
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gaa	atg	aga	atc	att	gac	ttc	ttc	tgg	aca	cta	acc	aat	cat	tta	agt	288
Glu	Met	Arg	Ile	Ile	Asp	Phe	Phe	Trp	Thr	Leu	Thr	Asn	His	Leu	Ser	
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atc	tgg	ttt	gca	acc	tgc	ctc	agc	att	tac	tat	ttc	ttc	aag	ata	ggg	336
Ile	Trp	Phe	Ala	Thr	Cys	Leu	Ser	Ile	Tyr	Tyr	Phe	Phe	Lys	Ile	Gly	
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aat	ttc	ttt	cac	cca	ctt	ttc	ctc	tgg	atg	aag	tgg	aga	att	gac	agg	384
Asn	Phe	Phe	His	Pro	Leu	Phe	Leu	Trp	Met	Lys	Trp	Arg	Ile	Asp	Arg	
		115					120					125				
gtg	att	tcc	tgg	att	cta	ctg	ggg	tgc	gtg	gtt	ctc	tct	gtg	ttt	att	432
Val	Ile	Ser	Trp	Ile	Leu	Leu	Gly	Cys	Val	Val	Leu	Ser	Val	Phe	Ile	
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Ser	Leu	Pro	Ala	Thr	Glu	Asn	Leu	Asn	Ala	Asp	Phe	Arg	Phe	Cys	Val	
145					150					155					160	
aag	gca	aag	agg	aaa	aca	aac	tta	act	tgg	agt	tgc	aga	gta	aat	aaa	528
Lys	Ala	Lys	Arg	Lys	Thr	Asn	Leu	Thr	Trp	Ser	Cys	Arg	Val	Asn	Lys	
				165					170					175		
act	caa	cat	gct	tct	acc	aag	tta	ttt	ctc	aac	ctg	gca	acg	ctg	ctc	576
Thr	Gln	His	Ala	Ser	Thr	Lys	Leu	Phe	Leu	Asn	Leu	Ala	Thr	Leu	Leu	
			180					185					190			
ccc	ttt	tgt	gtg	tgc	cta	atg	tcc	ttt	ttc	ctc	ttg	atc	ctc	tcc	ctg	624
Pro	Phe	Cys	Val	Cys	Leu	Met	Ser	Phe	Phe	Leu	Leu	Ile	Leu	Ser	Leu	
		195					200					205				
cgg	aga	cat	atc	agg	cga	atg	cag	ctc	agt	gcc	aca	ggg	tgc	aga	gac	672
Arg	Arg	His	Ile	Arg	Arg	Met	Gln	Leu	Ser	Ala	Thr	Gly	Cys	Arg	Asp	
	210					215					220					
ccc	agc	aca	gaa	gcc	cat	gtg	aga	gcc	ctg	aaa	gct	gtc	att	tcc	ttc	720
Pro	Ser	Thr	Glu	Ala	His	Val	Arg	Ala	Leu	Lys	Ala	Val	Ile	Ser	Phe	
225					230					235					240	
ctt	ctc	ctc	ttt	att	gcc	tac	tat	ttg	tcc	ttt	ctc	att	gcc	acc	tcc	768
Leu	Leu	Leu	Phe	Ile	Ala	Tyr	Tyr	Leu	Ser	Phe	Leu	Ile	Ala	Thr	Ser	
				245					250					255		
agc	tac	ttt	atg	cca	gag	atg	gaa	tta	gct	gtg	att	ttt	ggg	gag	tcc	816
Ser	Tyr	Phe	Met	Pro	Glu	Met	Glu	Leu	Ala	Val	Ile	Phe	Gly	Glu	Ser	
			260				265						270			
ata	gct	cta	atc	tac	ccc	tca	agt	cat	tca	ttt	atc	cta	ata	ctg	ggg	864
Ile	Ala	Leu	Ile	Tyr	Pro	Ser	Ser	His	Ser	Phe	Ile	Leu	Ile	Leu	Gly	
		275					280					285				

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 290 295 300

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Met Asp Trp Val Lys Lys Arg Lys Ile Ala Ser Ile Asp Leu Ile Leu  
 35 40 45

Thr Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Leu Leu  
 50 55 60

Asp Cys Phe Ile Leu Val Leu Tyr Pro Asp Val Tyr Ala Thr Gly Lys  
 65 70 75 80

Glu Met Arg Ile Ile Asp Phe Phe Trp Thr Leu Thr Asn His Leu Ser  
 85 90 95

Ile Trp Phe Ala Thr Cys Leu Ser Ile Tyr Tyr Phe Phe Lys Ile Gly  
 100 105 110

Asn Phe Phe His Pro Leu Phe Leu Trp Met Lys Trp Arg Ile Asp Arg  
 115 120 125

Val Ile Ser Trp Ile Leu Leu Gly Cys Val Val Leu Ser Val Phe Ile  
 130 135 140

Ser Leu Pro Ala Thr Glu Asn Leu Asn Ala Asp Phe Arg Phe Cys Val  
 145 150 155 160

Lys Ala Lys Arg Lys Thr Asn Leu Thr Trp Ser Cys Arg Val Asn Lys  
 165 170 175

Thr Gln His Ala Ser Thr Lys Leu Phe Leu Asn Leu Ala Thr Leu Leu  
 180 185 190

Pro Phe Cys Val Cys Leu Met Ser Phe Phe Leu Leu Ile Leu Ser Leu  
 195 200 205

Arg Arg His Ile Arg Arg Met Gln Leu Ser Ala Thr Gly Cys Arg Asp  
 210 215 220

Pro Ser Thr Glu Ala His Val Arg Ala Leu Lys Ala Val Ile Ser Phe  
 225 230 235 240

Leu Leu Leu Phe Ile Ala Tyr Tyr Leu Ser Phe Leu Ile Ala Thr Ser  
 245 250 255

Ser Tyr Phe Met Pro Glu Met Glu Leu Ala Val Ile Phe Gly Glu Ser  
 260 265 270

Ile Ala Leu Ile Tyr Pro Ser Ser His Ser Phe Ile Leu Ile Leu Gly  
 275 280 285

Asn Asn Lys Leu Arg His Ala Ser Leu Lys Val Ile Trp Lys Val Met  
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ttt tca gtg ggg atc tta ggg aat gca ttc att gga ttg gta aac tgc	96
Phe Ser Val Gly Ile Leu Gly Asn Ala Phe Ile Gly Leu Val Asn Cys	
20 25 30	
atg gac tgg gtc aag aag agg aaa att gcc tcc att gat tta atc ctc	144
Met Asp Trp Val Lys Lys Arg Lys Ile Ala Ser Ile Asp Leu Ile Leu	
35 40 45	
aca agt ctg gcc ata tcc aga att tgt cta ttg tgc gta ata cta tta	192
Thr Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Leu Leu	
50 55 60	
gat tgt ttt ata ttg gtg cta tat cca gat gtc tat gcc act ggt aaa	240
Asp Cys Phe Ile Leu Val Leu Tyr Pro Asp Val Tyr Ala Thr Gly Lys	
65 70 75 80	
gaa atg aga atc att gac ttc ttc tgg aca cta acc aat cat tta agt	288
Glu Met Arg Ile Ile Asp Phe Phe Trp Thr Leu Thr Asn His Leu Ser	
85 90 95	
atc tgg ttt gca acc tgc ctc agc att tac tat ttc ttc aag ata ggt	336
Ile Trp Phe Ala Thr Cys Leu Ser Ile Tyr Tyr Phe Phe Lys Ile Gly	
100 105 110	
aat ttc ttt cac cca ctt ttc ctc tgg atg aag tgg aga att gac agg	384
Asn Phe Phe His Pro Leu Phe Leu Trp Met Lys Trp Arg Ile Asp Arg	
115 120 125	
gtg att tcc tgg att cta ctg ggg tgc gtg gtt ctc tct gtg ttt att	432
Val Ile Ser Trp Ile Leu Leu Gly Cys Val Val Leu Ser Val Phe Ile	
130 135 140	
agc ctt cca gcc act gag aat ttg aac gct gat ttc agg ttt tgt gtg	480
Ser Leu Pro Ala Thr Glu Asn Leu Asn Ala Asp Phe Arg Phe Cys Val	
145 150 155 160	
aag gca aag agg aaa aca aac tta act tgg agt tgc aga gta aat aaa	528
Lys Ala Lys Arg Lys Thr Asn Leu Thr Trp Ser Cys Arg Val Asn Lys	
165 170 175	
act caa cat gct tct acc aag tta ttt ctc aac ctg gca acg ctg ctc	576

Thr Gln His Ala Ser Thr Lys Leu Phe Leu Asn Leu Ala Thr Leu Leu  
 180 185 190  
 ccc ttt tgt gtg tgc cta atg tcc ttt ttc ctc ttg atc ctc tcc ctg 624  
 Pro Phe Cys Val Cys Leu Met Ser Phe Phe Leu Leu Ile Leu Ser Leu  
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 cgg aga cat atc agg tga atgcagctca gtgccacagg gtgcagagac 672  
 Arg Arg His Ile Arg 210  
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Met Asp Trp Val Lys Lys Arg Lys Ile Ala Ser Ile Asp Leu Ile Leu  
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Thr Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Leu Leu  
 50 55 60

Asp Cys Phe Ile Leu Val Leu Tyr Pro Asp Val Tyr Ala Thr Gly Lys  
 65 70 75 80

Glu Met Arg Ile Ile Asp Phe Phe Trp Thr Leu Thr Asn His Leu Ser  
 85 90 95

Ile Trp Phe Ala Thr Cys Leu Ser Ile Tyr Tyr Phe Phe Lys Ile Gly  
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Asn Phe Phe His Pro Leu Phe Leu Trp Met Lys Trp Arg Ile Asp Arg  
 115 120 125

Val Ile Ser Trp Ile Leu Leu Gly Cys Val Val Leu Ser Val Phe Ile  
130 135 140

Ser Leu Pro Ala Thr Glu Asn Leu Asn Ala Asp Phe Arg Phe Cys Val  
145 150 155 160

Lys Ala Lys Arg Lys Thr Asn Leu Thr Trp Ser Cys Arg Val Asn Lys  
165 170 175

Thr Gln His Ala Ser Thr Lys Leu Phe Leu Asn Leu Ala Thr Leu Leu  
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Phe Ser Val Gly Ile Leu Gly Asn Ala Phe Ile Gly Leu Val Asn Cys	
20 25 30	
atg gac tgg gtc aag aag agg aaa att gcc tcc att gat tta atc ctc	144
Met Asp Trp Val Lys Lys Arg Lys Ile Ala Ser Ile Asp Leu Ile Leu	
35 40 45	
aca agt ctg gcc ata tcc aga att tgt cta ttg tgc gta ata cta tta	192
Thr Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Leu Leu	
50 55 60	
gat tgt ttt ata ttg gtg cta tat cca gat gtc tat gcc act ggt aaa	240
Asp Cys Phe Ile Leu Val Leu Tyr Pro Asp Val Tyr Ala Thr Gly Lys	
65 70 75 80	
gaa atg aga atc act gac ttc ttc tgg aca cta acc aat cat tta agt	288
Glu Met Arg Ile Thr Asp Phe Phe Trp Thr Leu Thr Asn His Leu Ser	
85 90 95	
atc tgg ttt gca acc tgc ctc agc att tac tat ttc ttc aag ata ggt	336
Ile Trp Phe Ala Thr Cys Leu Ser Ile Tyr Tyr Phe Phe Lys Ile Gly	
100 105 110	
aat ttc ttt cac cca ctt ttc ctc tgg atg aag tgg aga att gac agg	384
Asn Phe Phe His Pro Leu Phe Leu Trp Met Lys Trp Arg Ile Asp Arg	
115 120 125	
gtg att tcc tgg att cta ctg ggg tgc gtg gtt ctc tct gtg ttt att	432
Val Ile Ser Trp Ile Leu Leu Gly Cys Val Val Leu Ser Val Phe Ile	
130 135 140	
agc ctt cca gcc act gag aat ttg aac gct gat ttc agg ttt tgt gtg	480
Ser Leu Pro Ala Thr Glu Asn Leu Asn Ala Asp Phe Arg Phe Cys Val	
145 150 155 160	
aag gca aag agg aaa aca aac tta act tgg agt tgc aga gta aat aaa	528
Lys Ala Lys Arg Lys Thr Asn Leu Thr Trp Ser Cys Arg Val Asn Lys	
165 170 175	
act caa cat tct tct acc aag tta ttt ctc aac ctg gca acg ctg ctc	576
Thr Gln His Ser Ser Thr Lys Leu Phe Leu Asn Leu Ala Thr Leu Leu	
180 185 190	
ccc ttt tgt gtg tgc cta atg tcc ttt ttc ctc ttg atc ctc tcc ctg	624
Pro Phe Cys Val Cys Leu Met Ser Phe Phe Leu Leu Ile Leu Ser Leu	
195 200 205	
cgg aga cat atc agg cga atg cag ctc agt gcc aca ggg tgc aga gac	672
Arg Arg His Ile Arg Arg Met Gln Leu Ser Ala Thr Gly Cys Arg Asp	
210 215 220	
ccc agc aca gaa gcc cat gtg aga gcc ctg aaa gct gtc att tcc ttc	720

Pro Ser Thr Glu Ala His Val Arg Ala Leu Lys Ala Val Ile Ser Phe  
 225 230 235 240  
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 Leu Leu Leu Phe Ile Ala Tyr Tyr Leu Ser Phe Leu Ile Ala Thr Ser  
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 Ser Tyr Phe Met Pro Glu Ser Glu Leu Ala Val Ile Phe Gly Glu Ser  
 260 265 270  
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 Ile Ala Leu Ile Tyr Pro Ser Ser His Ser Phe Ile Leu Ile Leu Gly  
 275 280 285  
 aac aat aaa tta aga cat gca tct cta aag gtg att tgg aaa gta atg 912  
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 290 295 300  
 tct att cta aaa gga aga aaa ttc caa caa cat aaa caa atc tga 957  
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 Met Asp Trp Val Lys Lys Arg Lys Ile Ala Ser Ile Asp Leu Ile Leu  
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 Thr Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Leu Leu  
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 Asp Cys Phe Ile Leu Val Leu Tyr Pro Asp Val Tyr Ala Thr Gly Lys  
 65 70 75 80  
 Glu Met Arg Ile Thr Asp Phe Phe Trp Thr Leu Thr Asn His Leu Ser  
 85 90 95  
 Ile Trp Phe Ala Thr Cys Leu Ser Ile Tyr Tyr Phe Phe Lys Ile Gly  
 100 105 110  
 Asn Phe Phe His Pro Leu Phe Leu Trp Met Lys Trp Arg Ile Asp Arg  
 115 120 125



Val Ile Ser Trp Ile Leu Leu Gly Cys Val Val Leu Ser Val Phe Ile  
 130 135 140

Ser Leu Pro Ala Thr Glu Asn Leu Asn Ala Asp Phe Arg Phe Cys Val  
 145 150 155 160

Lys Ala Lys Arg Lys Thr Asn Leu Thr Trp Ser Cys Arg Val Asn Lys  
 165 170 175

Thr Gln His Ser Ser Thr Lys Leu Phe Leu Asn Leu Ala Thr Leu Leu  
 180 185 190

Pro Phe Cys Val Cys Leu Met Ser Phe Phe Leu Leu Ile Leu Ser Leu  
 195 200 205

Arg Arg His Ile Arg Arg Met Gln Leu Ser Ala Thr Gly Cys Arg Asp  
 210 215 220

Pro Ser Thr Glu Ala His Val Arg Ala Leu Lys Ala Val Ile Ser Phe  
 225 230 235 240

Leu Leu Leu Phe Ile Ala Tyr Tyr Leu Ser Phe Leu Ile Ala Thr Ser  
 245 250 255

Ser Tyr Phe Met Pro Glu Ser Glu Leu Ala Val Ile Phe Gly Glu Ser  
 260 265 270

Ile Ala Leu Ile Tyr Pro Ser Ser His Ser Phe Ile Leu Ile Leu Gly  
 275 280 285

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ttc ata cta gga ata ttg ggg aat gga tac att gca cta gtc aac tgg	96
Phe Ile Leu Gly Ile Leu Gly Asn Gly Tyr Ile Ala Leu Val Asn Trp	
20 25 30	
att gac tgg att aag aag aaa aag att tcc aca gtt gac tac atc ctt	144
Ile Asp Trp Ile Lys Lys Lys Lys Ile Ser Thr Val Asp Tyr Ile Leu	
35 40 45	
acc aat tta gtt atc gcc aga att tgt ttg atc agt gta atg gtt gta	192
Thr Asn Leu Val Ile Ala Arg Ile Cys Leu Ile Ser Val Met Val Val	
50 55 60	
aat ggc att gta ata gta ctg aac cca gat gtt tat aca aaa aat aaa	240
Asn Gly Ile Val Ile Val Leu Asn Pro Asp Val Tyr Thr Lys Asn Lys	
65 70 75 80	
caa cag ata gtc att ttt acc ttc tgg aca ttt gcc aac tac tta aat	288
Gln Gln Ile Val Ile Phe Thr Phe Trp Thr Phe Ala Asn Tyr Leu Asn	
85 90 95	
atg tgg att acc acc tgc ctt aat gtc ttc tat ttt ctg aag ata gcc	336
Met Trp Ile Thr Thr Cys Leu Asn Val Phe Tyr Phe Leu Lys Ile Ala	
100 105 110	
agt tcc tct cat cca ctt ttt ctc tgg ctg aag tgg aaa att gat atg	384
Ser Ser Ser His Pro Leu Phe Leu Trp Leu Lys Trp Lys Ile Asp Met	
115 120 125	
gtg gtg cac tgg atc ctg ctg gga tgc ttt gcc att tcc ttg ttg gtc	432
Val Val His Trp Ile Leu Leu Gly Cys Phe Ala Ile Ser Leu Leu Val	
130 135 140	

167/447

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 Ile Ala Lys His Lys Arg Asn Ile Thr Glu Met Phe His Val Ser Lys  
 165 170 175  
 ata cca tac ttt gaa ccc ttg act ctc ttt aac ctg ttt gca att gtc 576  
 Ile Pro Tyr Phe Glu Pro Leu Thr Leu Phe Asn Leu Phe Ala Ile Val  
 180 185 190  
 cca ttt att gtg tca ctg ata tca ttt ttc ctt tta gta aga tct tta 624  
 Pro Phe Ile Val Ser Leu Ile Ser Phe Phe Leu Leu Val Arg Ser Leu  
 195 200 205  
 tgg aga cat acc aag caa ata aaa ctc tat gct acc ggc agt aga gac 672  
 Trp Arg His Thr Lys Gln Ile Lys Leu Tyr Ala Thr Gly Ser Arg Asp  
 210 215 220  
 ccc agc aca gaa gtt cat gtg aga gcc att aaa act atg act tca ttt 720  
 Pro Ser Thr Glu Val His Val Arg Ala Ile Lys Thr Met Thr Ser Phe  
 225 230 235 240  
 atc ttc ttt ttt ttc cta tac tat att tct tct att ttg atg acc ttt 768  
 Ile Phe Phe Phe Phe Leu Tyr Tyr Ile Ser Ser Ile Leu Met Thr Phe  
 245 250 255  
 agc tat ctt atg aca aaa tac aag tta gct gtg gag ttt gga gag att 816  
 Ser Tyr Leu Met Thr Lys Tyr Lys Leu Ala Val Glu Phe Gly Glu Ile  
 260 265 270  
 gca gca att ctc tac ccc ttg ggt cac tca ctt att tta att gtt tta 864  
 Ala Ala Ile Leu Tyr Pro Leu Gly His Ser Leu Ile Leu Ile Val Leu  
 275 280 285  
 aat aat aaa ctg agg cag aca ttt gtc aga atg ctg aca tgt aga aaa 912  
 Asn Asn Lys Leu Arg Gln Thr Phe Val Arg Met Leu Thr Cys Arg Lys  
 290 295 300  
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 Ile Ala Cys Met Ile 930  
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Phe Ile Leu Gly Ile Leu Gly Asn Gly Tyr Ile Ala Leu Val Asn Trp  
 20 25 30

Ile Asp Trp Ile Lys Lys Lys Lys Ile Ser Thr Val Asp Tyr Ile Leu

35

40

45

Thr Asn Leu Val Ile Ala Arg Ile Cys Leu Ile Ser Val Met Val Val  
 50 55 60

Asn Gly Ile Val Ile Val Leu Asn Pro Asp Val Tyr Thr Lys Asn Lys  
 65 70 75 80

Gln Gln Ile Val Ile Phe Thr Phe Trp Thr Phe Ala Asn Tyr Leu Asn  
 85 90 95

Met Trp Ile Thr Thr Cys Leu Asn Val Phe Tyr Phe Leu Lys Ile Ala  
 100 105 110

Ser Ser Ser His Pro Leu Phe Leu Trp Leu Lys Trp Lys Ile Asp Met  
 115 120 125

Val Val His Trp Ile Leu Leu Gly Cys Phe Ala Ile Ser Leu Leu Val  
 130 135 140

Ser Leu Ile Ala Ala Ile Val Leu Ser Cys Asp Tyr Arg Phe His Ala  
 145 150 155 160

Ile Ala Lys His Lys Arg Asn Ile Thr Glu Met Phe His Val Ser Lys  
 165 170 175

Ile Pro Tyr Phe Glu Pro Leu Thr Leu Phe Asn Leu Phe Ala Ile Val  
 180 185 190

Pro Phe Ile Val Ser Leu Ile Ser Phe Phe Leu Leu Val Arg Ser Leu  
 195 200 205

Trp Arg His Thr Lys Gln Ile Lys Leu Tyr Ala Thr Gly Ser Arg Asp  
 210 215 220

Pro Ser Thr Glu Val His Val Arg Ala Ile Lys Thr Met Thr Ser Phe  
 225 230 235 240

Ile Phe Phe Phe Phe Leu Tyr Tyr Ile Ser Ser Ile Leu Met Thr Phe  
 245 250 255

Ser Tyr Leu Met Thr Lys Tyr Lys Leu Ala Val Glu Phe Gly Glu Ile  
 260 265 270

Ala Ala Ile Leu Tyr Pro Leu Gly His Ser Leu Ile Leu Ile Val Leu  
 275 280 285

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 290 295 300

Ile Ala Cys Met Ile  
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 1 5 10 15  
 ttc ata cta gga ata ttg ggg aat gga tac att gca cta gtc aac tgg 96  
 Phe Ile Leu Gly Ile Leu Gly Asn Gly Tyr Ile Ala Leu Val Asn Trp  
 20 25 30  
 att gac tgg att aag aag aaa aag att tcc aca gtt gac tac atc ctt 144  
 Ile Asp Trp Ile Lys Lys Lys Lys Ile Ser Thr Val Asp Tyr Ile Leu  
 35 40 45  
 acc aat tta gtt atc gcc aga att tgt ttg atc agt gta atg gtt gta 192  
 Thr Asn Leu Val Ile Ala Arg Ile Cys Leu Ile Ser Val Met Val Val  
 50 55 60

aat ggc att gta ata gta ctg aac cca gat gtt tat aca aaa aat aaa Asn Gly Ile Val Ile Val Leu Asn Pro Asp Val Tyr Thr Lys Asn Lys 65 70 75 80	240
caa cag ata gtc att ttt acc ttc tgg aca ttt gcc aac tac tta aat Gln Gln Ile Val Ile Phe Thr Phe Trp Thr Phe Ala Asn Tyr Leu Asn 85 90 95	288
atg tgg att acc acc tgc ctt aat gtc ttc tat ttt ctg aag ata gcc Met Trp Ile Thr Thr Cys Leu Asn Val Phe Tyr Phe Leu Lys Ile Ala 100 105 110	336
agt tcc tct cat cca ctt ttt ctc tgg ctg aag tgg aaa att gat atg Ser Ser Ser His Pro Leu Phe Leu Trp Leu Lys Trp Lys Ile Asp Met 115 120 125	384
gtg gtg cac tgg atc ctg ctg gga tgc ttt gcc att tcc ttg ttg gtc Val Val His Trp Ile Leu Leu Gly Cys Phe Ala Ile Ser Leu Leu Val 130 135 140	432
agc ctt ata gca gca ata gta ctg agt tgt gat tat agg ttt cat gca Ser Leu Ile Ala Ala Ile Val Leu Ser Cys Asp Tyr Arg Phe His Ala 145 150 155 160	480
att gcc aaa cat aaa aga aac att act gaa atg ttc cat gtg agt aaa Ile Ala Lys His Lys Arg Asn Ile Thr Glu Met Phe His Val Ser Lys 165 170 175	528
ata cca tac ttt gaa ccc ttg act ctc ttt aac ctg ttt gca att gtc Ile Pro Tyr Phe Glu Pro Leu Thr Leu Phe Asn Leu Phe Ala Ile Val 180 185 190	576
cca ttt att gtg tca ctg ata tca ttt ttc ctt tta gta aga tct tta Pro Phe Ile Val Ser Leu Ile Ser Phe Phe Leu Leu Val Arg Ser Leu 195 200 205	624
tgg aga cat acc aag caa ata aaa ctc tat gct acc ggc agt aga gac Trp Arg His Thr Lys Gln Ile Lys Leu Tyr Ala Thr Gly Ser Arg Asp 210 215 220	672
ccc agc aca gaa gtt cat gtg aga gcc att aaa act atg act tca ttt Pro Ser Thr Glu Val His Val Arg Ala Ile Lys Thr Met Thr Ser Phe 225 230 235 240	720
atc ttc ttt ttt ttc cta tac tat att tct tct att ttg atg acc ttt Ile Phe Phe Phe Phe Leu Tyr Tyr Ile Ser Ser Ile Leu Met Thr Phe 245 250 255	768
agc tat ctt atg aca aaa tac aag tta gct gtg gag ttt gga gag att Ser Tyr Leu Met Thr Lys Tyr Lys Leu Ala Val Glu Phe Gly Glu Ile 260 265 270	816
gca gca att ctc tac ccc ttg ggt cac tca ctt att tta att gtt tta Ala Ala Ile Leu Tyr Pro Leu Gly His Ser Leu Ile Leu Ile Val Leu 275 280 285	864
aat aat aaa ctg agg cag aca ttt gtc aga atg ctg aca tgt aga aaa Asn Asn Lys Leu Arg Gln Thr Phe Val Arg Met Leu Thr Cys Arg Lys 290 295 300	912

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930

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<400> 100

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Phe Ile Leu Gly Ile Leu Gly Asn Gly Tyr Ile Ala Leu Val Asn Trp  
 20 25 30

Ile Asp Trp Ile Lys Lys Lys Lys Ile Ser Thr Val Asp Tyr Ile Leu  
 35 40 45

Thr Asn Leu Val Ile Ala Arg Ile Cys Leu Ile Ser Val Met Val Val  
 50 55 60

Asn Gly Ile Val Ile Val Leu Asn Pro Asp Val Tyr Thr Lys Asn Lys  
 65 70 75 80

Gln Gln Ile Val Ile Phe Thr Phe Trp Thr Phe Ala Asn Tyr Leu Asn  
 85 90 95

Met Trp Ile Thr Thr Cys Leu Asn Val Phe Tyr Phe Leu Lys Ile Ala  
 100 105 110

Ser Ser Ser His Pro Leu Phe Leu Trp Leu Lys Trp Lys Ile Asp Met  
 115 120 125

Val Val His Trp Ile Leu Leu Gly Cys Phe Ala Ile Ser Leu Leu Val  
 130 135 140

Ser Leu Ile Ala Ala Ile Val Leu Ser Cys Asp Tyr Arg Phe His Ala  
 145 150 155 160

Ile Ala Lys His Lys Arg Asn Ile Thr Glu Met Phe His Val Ser Lys  
 165 170 175

Ile Pro Tyr Phe Glu Pro Leu Thr Leu Phe Asn Leu Phe Ala Ile Val  
 180 185 190

Pro Phe Ile Val Ser Leu Ile Ser Phe Phe Leu Leu Val Arg Ser Leu

195

200

205

Trp Arg His Thr Lys Gln Ile Lys Leu Tyr Ala Thr Gly Ser Arg Asp  
210 215 220

Pro Ser Thr Glu Val His Val Arg Ala Ile Lys Thr Met Thr Ser Phe  
225 230 235 240

Ile Phe Phe Phe Phe Leu Tyr Tyr Ile Ser Ser Ile Leu Met Thr Phe  
245 250 255

Ser Tyr Leu Met Thr Lys Tyr Lys Leu Ala Val Glu Phe Gly Glu Ile  
260 265 270

Ala Ala Ile Leu Tyr Pro Leu Gly His Ser Leu Ile Leu Ile Val Leu  
275 280 285

Asn Asn Lys Leu Arg Gln Thr Phe Val Arg Met Leu Thr Cys Arg Lys  
290 295 300

Ile Ala Cys Val Ile  
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Met Phe Ser Pro Ala Asp Asn Ile Phe Ile Ile Leu Ile Thr Gly Glu	
1 5 10 15	
ttc ata cta gga ata ttg ggg aat gga tac att gca cta gtc aac tgg	96
Phe Ile Leu Gly Ile Leu Gly Asn Gly Tyr Ile Ala Leu Val Asn Trp	
20 25 30	
att gac tgg att aag aag aaa aag att tcc aca gtt gac tac atc ctt	144
Ile Asp Trp Ile Lys Lys Lys Lys Ile Ser Thr Val Asp Tyr Ile Leu	
35 40 45	
acc aat tta gtt atc gcc aga att tgt ttg atc agt gta atg gtt gta	192
Thr Asn Leu Val Ile Ala Arg Ile Cys Leu Ile Ser Val Met Val Val	
50 55 60	
aat ggc att gta ata gta ctg aac cca gat gtt tat aca aaa aat aaa	240
Asn Gly Ile Val Ile Val Leu Asn Pro Asp Val Tyr Thr Lys Asn Lys	
65 70 75 80	
caa cag ata gtc att ttt acc ttc tgg aca ttt gcc aac tac tta aat	288
Gln Gln Ile Val Ile Phe Thr Phe Trp Thr Phe Ala Asn Tyr Leu Asn	
85 90 95	
atg tgg att acc acc tgc ctt aat gtc ttc tat ttt ctg aag ata gcc	336
Met Trp Ile Thr Thr Cys Leu Asn Val Phe Tyr Phe Leu Lys Ile Ala	
100 105 110	
agt tcc tct cat cca ctt ttt ctc tgg ctg aag tgg aaa att gat atg	384
Ser Ser Ser His Pro Leu Phe Leu Trp Leu Lys Trp Lys Ile Asp Met	
115 120 125	
gtg gtg cac tgg atc ctg ctg gga tgc ttt gcc att tcc ttg ttg gtc	432
Val Val His Trp Ile Leu Leu Gly Cys Phe Ala Ile Ser Leu Leu Val	
130 135 140	
agc ctt ata gca gca ata gta ctg agt tgt gat tat agg ttt cat gca	480
Ser Leu Ile Ala Ala Ile Val Leu Ser Cys Asp Tyr Arg Phe His Ala	
145 150 155 160	
att gcc aaa cat aaa aga aac att act gaa atg ttc cat gtg agt aaa	528
Ile Ala Lys His Lys Arg Asn Ile Thr Glu Met Phe His Val Ser Lys	
165 170 175	
ata cca tac ttt gaa ccc ttg act ctc ttt aac ctg ttt gca att gtc	576
Ile Pro Tyr Phe Glu Pro Leu Thr Leu Phe Asn Leu Phe Ala Ile Val	
180 185 190	
cca ttt att gtg tca ctg ata tca ttt ttc ctt tta gta aga tct tta	624
Pro Phe Ile Val Ser Leu Ile Ser Phe Phe Leu Leu Val Arg Ser Leu	
195 200 205	
tgg aga cat acc aag caa ata aaa ctc tat gct acc ggc agt aga gac	672
Trp Arg His Thr Lys Gln Ile Lys Leu Tyr Ala Thr Gly Ser Arg Asp	
210 215 220	

ccc agc aca gaa gtt cat gtg aga gcc att aaa act atg act tca ttt 720  
 Pro Ser Thr Glu Val His Val Arg Ala Ile Lys Thr Met Thr Ser Phe  
 225 230 235 240

atc ttc ttt ttt ttc cta tac tat att tct tct att ttg atg acc ttt 768  
 Ile Phe Phe Phe Phe Leu Tyr Tyr Ile Ser Ser Ile Leu Met Thr Phe  
 245 250 255

agc tat ctt atg aca aaa tac aag tta gct gtg gag ttt gga gag att 816  
 Ser Tyr Leu Met Thr Lys Tyr Lys Leu Ala Val Glu Phe Gly Glu Ile  
 260 265 270

gca gca att ctc cac ccc ttg ggt cac tca ctt att tta att gtt tta 864  
 Ala Ala Ile Leu His Pro Leu Gly His Ser Leu Ile Leu Ile Val Leu  
 275 280 285

aat aat aaa ctg agg cag aca ttt gtc aga atg ctg aca tgt aga aaa 912  
 Asn Asn Lys Leu Arg Gln Thr Phe Val Arg Met Leu Thr Cys Arg Lys  
 290 295 300

att gcc tgc atg ata tga  
 Ile Ala Cys Met Ile 930  
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<210> 102  
 <211> 309  
 <212> PRT  
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<400> 102

Met Phe Ser Pro Ala Asp Asn Ile Phe Ile Ile Leu Ile Thr Gly Glu  
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Phe Ile Leu Gly Ile Leu Gly Asn Gly Tyr Ile Ala Leu Val Asn Trp  
 20 25 30

Ile Asp Trp Ile Lys Lys Lys Lys Ile Ser Thr Val Asp Tyr Ile Leu  
 35 40 45

Thr Asn Leu Val Ile Ala Arg Ile Cys Leu Ile Ser Val Met Val Val  
 50 55 60

Asn Gly Ile Val Ile Val Leu Asn Pro Asp Val Tyr Thr Lys Asn Lys  
 65 70 75 80

Gln Gln Ile Val Ile Phe Thr Phe Trp Thr Phe Ala Asn Tyr Leu Asn  
 85 90 95

Met Trp Ile Thr Thr Cys Leu Asn Val Phe Tyr Phe Leu Lys Ile Ala  
 100 105 110

Ser Ser Ser His Pro Leu Phe Leu Trp Leu Lys Trp Lys Ile Asp Met  
 115 120 125

Val Val His Trp Ile Leu Leu Gly Cys Phe Ala Ile Ser Leu Leu Val  
 130 135 140

Ser Leu Ile Ala Ala Ile Val Leu Ser Cys Asp Tyr Arg Phe His Ala  
 145 150 155 160

Ile Ala Lys His Lys Arg Asn Ile Thr Glu Met Phe His Val Ser Lys  
 165 170 175

Ile Pro Tyr Phe Glu Pro Leu Thr Leu Phe Asn Leu Phe Ala Ile Val  
 180 185 190

Pro Phe Ile Val Ser Leu Ile Ser Phe Phe Leu Leu Val Arg Ser Leu  
 195 200 205

Trp Arg His Thr Lys Gln Ile Lys Leu Tyr Ala Thr Gly Ser Arg Asp  
 210 215 220

Pro Ser Thr Glu Val His Val Arg Ala Ile Lys Thr Met Thr Ser Phe  
 225 230 235 240

Ile Phe Phe Phe Phe Leu Tyr Tyr Ile Ser Ser Ile Leu Met Thr Phe  
 245 250 255

Ser Tyr Leu Met Thr Lys Tyr Lys Leu Ala Val Glu Phe Gly Glu Ile  
 260 265 270

Ala Ala Ile Leu His Pro Leu Gly His Ser Leu Ile Leu Ile Val Leu  
 275 280 285

Asn Asn Lys Leu Arg Gln Thr Phe Val Arg Met Leu Thr Cys Arg Lys  
 290 295 300

Ile Ala Cys Met Ile  
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 1 5 10 15  
 ttc ata cta gga ata ttg ggg aat gga tac att gca cta gtc aac tgg 96  
 Phe Ile Leu Gly Ile Leu Gly Asn Gly Tyr Ile Ala Leu Val Asn Trp  
 20 25 30  
 att gac tgg att aag aag aaa aag att tcc aca gtt gac tac atc ctt 144  
 Ile Asp Trp Ile Lys Lys Lys Lys Ile Ser Thr Val Asp Tyr Ile Leu  
 35 40 45  
 acc aat tta gtt atc gcc aga att tgt ttg atc agt gta atg gtt gta 192  
 Thr Asn Leu Val Ile Ala Arg Ile Cys Leu Ile Ser Val Met Val Val  
 50 55 60  
 aat ggc att gta ata gta ctg aac cca gat gtt tat aca aaa aat aaa 240  
 Asn Gly Ile Val Ile Val Leu Asn Pro Asp Val Tyr Thr Lys Asn Lys  
 65 70 75 80  
 caa cag ata gtc att ttt acc ttc tgg aca ttt gcc aac tac tta aat 288  
 Gln Gln Ile Val Ile Phe Thr Phe Trp Thr Phe Ala Asn Tyr Leu Asn  
 85 90 95  
 atg tgg att acc acc tgc ctt aat gtc ttc tat ttt ctg aag ata gcc 336  
 Met Trp Ile Thr Thr Cys Leu Asn Val Phe Tyr Phe Leu Lys Ile Ala  
 100 105 110  
 agt tcc tct cat cca ctt ttt ctg tgg ctg aag tgg aaa att gat atg 384  
 Ser Ser Ser His Pro Leu Phe Leu Trp Leu Lys Trp Lys Ile Asp Met  
 115 120 125  
 gtg gtg cac tgg atc ctg ctg gga tgc ttt gcc att tcc ttg ttg gtc 432  
 Val Val His Trp Ile Leu Leu Gly Cys Phe Ala Ile Ser Leu Leu Val

130	135	140	
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att gcc aaa cat aaa gga aac att act gaa atg ttc cat gtg agt aaa Ile Ala Lys His Lys Gly Asn Ile Thr Glu Met Phe His Val Ser Lys 165 170 175			528
ata cca tac ttt gaa ccc ttg act ctc ttt aac ctg ttt gca att gtc Ile Pro Tyr Phe Glu Pro Leu Thr Leu Phe Asn Leu Phe Ala Ile Val 180 185 190			576
cca ttt att gtg tca ctg ata tca ttt ttc ctt tta gta aga tct tta Pro Phe Ile Val Ser Leu Ile Ser Phe Phe Leu Leu Val Arg Ser Leu 195 200 205			624
tgg aga cat acc aag caa ata aaa ctc tat gct acc ggc agt aga gac Trp Arg His Thr Lys Gln Ile Lys Leu Tyr Ala Thr Gly Ser Arg Asp 210 215 220			672
ccc agc aca gaa gtt cat gtg aga gcc att aaa act atg act tca ttt Pro Ser Thr Glu Val His Val Arg Ala Ile Lys Thr Met Thr Ser Phe 225 230 235 240			720
atc ttc ttt ttt ttc cta tac tat att tct tct att ttg atg acc ttt Ile Phe Phe Phe Phe Leu Tyr Tyr Ile Ser Ser Ile Leu Met Thr Phe 245 250 255			768
agc tat ctt atg aca aaa tac aag tta gct gtg gag ttt gga gag att Ser Tyr Leu Met Thr Lys Tyr Lys Leu Ala Val Glu Phe Gly Glu Ile 260 265 270			816
gca gca att ctc tac ccc ttg ggt cac tca ctt att tta att gtt tta Ala Ala Ile Leu Tyr Pro Leu Gly His Ser Leu Ile Leu Ile Val Leu 275 280 285			864
aat aat aaa ctg agg cag aca ttt gtc aga atg ctg aca tgt aga aaa Asn Asn Lys Leu Arg Gln Thr Phe Val Arg Met Leu Thr Cys Arg Lys 290 295 300			912
att gcc tgc gtg ata tga Ile Ala Cys Val Ile 305			930

<210> 104  
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 <212> PRT  
 <213> homo sapiens

<400> 104

Met Phe Ser Pro Ala Asp Asn Ile Phe Ile Ile Leu Ile Thr Gly Glu  
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Phe Ile Leu Gly Ile Leu Gly Asn Gly Tyr Ile Ala Leu Val Asn Trp  
 20 25 30

Ile Asp Trp Ile Lys Lys Lys Lys Ile Ser Thr Val Asp Tyr Ile Leu  
 35 40 45  
 Thr Asn Leu Val Ile Ala Arg Ile Cys Leu Ile Ser Val Met Val Val  
 50 55 60  
 Asn Gly Ile Val Ile Val Leu Asn Pro Asp Val Tyr Thr Lys Asn Lys  
 65 70 75 80  
 Gln Gln Ile Val Ile Phe Thr Phe Trp Thr Phe Ala Asn Tyr Leu Asn  
 85 90 95  
 Met Trp Ile Thr Thr Cys Leu Asn Val Phe Tyr Phe Leu Lys Ile Ala  
 100 105 110  
 Ser Ser Ser His Pro Leu Phe Leu Trp Leu Lys Trp Lys Ile Asp Met  
 115 120 125  
 Val Val His Trp Ile Leu Leu Gly Cys Phe Ala Ile Ser Leu Leu Val  
 130 135 140  
 Ser Leu Ile Ala Ala Ile Val Leu Ser Cys Asp Tyr Arg Phe His Ala  
 145 150 155 160  
 Ile Ala Lys His Lys Gly Asn Ile Thr Glu Met Phe His Val Ser Lys  
 165 170 175  
 Ile Pro Tyr Phe Glu Pro Leu Thr Leu Phe Asn Leu Phe Ala Ile Val  
 180 185 190  
 Pro Phe Ile Val Ser Leu Ile Ser Phe Phe Leu Leu Val Arg Ser Leu  
 195 200 205  
 Trp Arg His Thr Lys Gln Ile Lys Leu Tyr Ala Thr Gly Ser Arg Asp  
 210 215 220  
 Pro Ser Thr Glu Val His Val Arg Ala Ile Lys Thr Met Thr Ser Phe  
 225 230 235 240  
 Ile Phe Phe Phe Phe Leu Tyr Tyr Ile Ser Ser Ile Leu Met Thr Phe  
 245 250 255  
 Ser Tyr Leu Met Thr Lys Tyr Lys Leu Ala Val Glu Phe Gly Glu Ile  
 260 265 270

179/447

Ala Ala Ile Leu Tyr Pro Leu Gly His Ser Leu Ile Leu Ile Val Leu  
 275 280 285

Asn Asn Lys Leu Arg Gln Thr Phe Val Arg Met Leu Thr Cys Arg Lys  
 290 295 300

Ile Ala Cys Val Ile  
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<210> 105  
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 1 5 10 15  
 ttc ata cta gga ata ttg ggg aat gga tac att gca cta gtc aac tgg 96  
 Phe Ile Leu Gly Ile Leu Gly Asn Gly Tyr Ile Ala Leu Val Asn Trp  
 20 25 30  
 att gac tgg att aag aag aaa aag att tcc aca gtt gac tac atc ctt 144  
 Ile Asp Trp Ile Lys Lys Lys Lys Ile Ser Thr Val Asp Tyr Ile Leu  
 35 40 45  
 acc aat tta gtt atc gcc aga att tgt ttg atc agt gta atg gtt gta 192  
 Thr Asn Leu Val Ile Ala Arg Ile Cys Leu Ile Ser Val Met Val Val  
 50 55 60  
 aat ggc att gta ata gta ctg aac cca gat gtt tat aca aaa aat aaa 240  
 Asn Gly Ile Val Ile Val Leu Asn Pro Asp Val Tyr Thr Lys Asn Lys

65	70	75	80	
caa cag ata gtc att ttt acc ttc tgg	aca ttt gcc aac tac tta aat	288		
Gln Gln Ile Val Ile Phe Thr Phe Trp	Thr Phe Ala Asn Tyr Leu Asn			
85	90		95	
atg tgg att acc acc tgc ctt aat gtc	ttc tat ttt ctg aag ata gcc	336		
Met Trp Ile Thr Thr Cys Leu Asn Val	Phe Tyr Phe Leu Lys Ile Ala			
100	105		110	
agt tcc tct cat cca ctt ttt ctc tgg	ctg aag ggg aaa att gat atg	384		
Ser Ser Ser His Pro Leu Phe Leu Trp	Leu Lys Gly Lys Ile Asp Met			
115	120		125	
gtg gtg cac tgg atc ctg ctg gga tgc	ttt gcc att tcc ttg ttg gtc	432		
Val Val His Trp Ile Leu Leu Gly Cys	Phe Ala Ile Ser Leu Leu Val			
130	135		140	
agc ctt ata gca gca ata gta ctg agt	tgt gat tat agg ttt cat gca	480		
Ser Leu Ile Ala Ala Ile Val Leu Ser	Cys Asp Tyr Arg Phe His Ala			
145	150		155	160
att gcc aaa cat aaa aga aac att act	gaa atg ttc cat gtg agt aaa	528		
Ile Ala Lys His Lys Arg Asn Ile Thr	Glu Met Phe His Val Ser Lys			
165	170		175	
ata cca tac ttt gaa ccc ttg act ctc	ttt aac ctg ttt gca att gtc	576		
Ile Pro Tyr Phe Glu Pro Leu Thr Leu	Phe Asn Leu Phe Ala Ile Val			
180	185		190	
cca ttt att gtg tca ctg ata tca ttt	ttc ctt tta gta aga tct tta	624		
Pro Phe Ile Val Ser Leu Ile Ser Phe	Phe Leu Leu Val Arg Ser Leu			
195	200		205	
tgg aga cat acc aag caa ata aaa ctc	tat gct acc ggc agt aga gac	672		
Trp Arg His Thr Lys Gln Ile Lys Leu	Tyr Ala Thr Gly Ser Arg Asp			
210	215		220	
ccc agc aca gaa gtt cat gtg aga gcc	att aaa act atg act tca ttt	720		
Pro Ser Thr Glu Val His Val Arg Ala	Ile Lys Thr Met Thr Ser Phe			
225	230		235	240
atc ttc ttt ttt ttc cta tac tat att	tct tct att ttg atg acc ttt	768		
Ile Phe Phe Phe Phe Leu Tyr Tyr Ile	Ser Ser Ile Leu Met Thr Phe			
245	250		255	
agc tat ctt atg aca aaa tac aag tta	gct gtg gag ttt gga gag att	816		
Ser Tyr Leu Met Thr Lys Tyr Lys Leu	Ala Val Glu Phe Gly Glu Ile			
260	265		270	
gca gca att ctc tac ccc ttg ggt cac	tca ctt att tta att gtt tta	864		
Ala Ala Ile Leu Tyr Pro Leu Gly His	Ser Leu Ile Leu Ile Val Leu			
275	280		285	
aat aat aaa ctg agg cag aca ttt gtc	aga atg ctg aca tgt aga aaa	912		
Asn Asn Lys Leu Arg Gln Thr Phe Val	Arg Met Leu Thr Cys Arg Lys			
290	295		300	
att gcc tgc gtg ata tga		930		
Ile Ala Cys Val Ile				
305				



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<400> 106

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Phe Ile Leu Gly Ile Leu Gly Asn Gly Tyr Ile Ala Leu Val Asn Trp  
 20 25 30

Ile Asp Trp Ile Lys Lys Lys Lys Ile Ser Thr Val Asp Tyr Ile Leu  
 35 40 45

Thr Asn Leu Val Ile Ala Arg Ile Cys Leu Ile Ser Val Met Val Val  
 50 55 60

Asn Gly Ile Val Ile Val Leu Asn Pro Asp Val Tyr Thr Lys Asn Lys  
 65 70 75 80

Gln Gln Ile Val Ile Phe Thr Phe Trp Thr Phe Ala Asn Tyr Leu Asn  
 85 90 95

Met Trp Ile Thr Thr Cys Leu Asn Val Phe Tyr Phe Leu Lys Ile Ala  
 100 105 110

Ser Ser Ser His Pro Leu Phe Leu Trp Leu Lys Gly Lys Ile Asp Met  
 115 120 125

Val Val His Trp Ile Leu Leu Gly Cys Phe Ala Ile Ser Leu Leu Val  
 130 135 140

Ser Leu Ile Ala Ala Ile Val Leu Ser Cys Asp Tyr Arg Phe His Ala  
 145 150 155 160

Ile Ala Lys His Lys Arg Asn Ile Thr Glu Met Phe His Val Ser Lys  
 165 170 175

Ile Pro Tyr Phe Glu Pro Leu Thr Leu Phe Asn Leu Phe Ala Ile Val  
 180 185 190

Pro Phe Ile Val Ser Leu Ile Ser Phe Phe Leu Leu Val Arg Ser Leu  
 195 200 205

Trp Arg His Thr Lys Gln Ile Lys Leu Tyr Ala Thr Gly Ser Arg Asp  
 210 215 220

Pro Ser Thr Glu Val His Val Arg Ala Ile Lys Thr Met Thr Ser Phe  
 225 230 235 240

Ile Phe Phe Phe Phe Leu Tyr Tyr Ile Ser Ser Ile Leu Met Thr Phe  
 245 250 255

Ser Tyr Leu Met Thr Lys Tyr Lys Leu Ala Val Glu Phe Gly Glu Ile  
 260 265 270

Ala Ala Ile Leu Tyr Pro Leu Gly His Ser Leu Ile Leu Ile Val Leu  
 275 280 285

Asn Asn Lys Leu Arg Gln Thr Phe Val Arg Met Leu Thr Cys Arg Lys  
 290 295 300

Ile Ala Cys Val Ile  
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 Met Phe Ser Pro Ala Asp Asn Ile Phe Ile Ile Leu Ile Thr Gly Glu

183/447

1	5	10	15	
ttc ata cta gga ata ttg ggg aat gga tac att gca cta gtc aac tgg Phe Ile Leu Gly Ile Leu Gly Asn Gly Tyr Ile Ala Leu Val Asn Trp 20 25 30				96
att gac tgg att aag aag aaa aag att tcc aca gtt gac tac atc ttt Ile Asp Trp Ile Lys Lys Lys Lys Ile Ser Thr Val Asp Tyr Ile Phe 35 40 45				144
acc aat tta gtt atc gcc aga att tgt ttg atc agt gta atg gtt gta Thr Asn Leu Val Ile Ala Arg Ile Cys Leu Ile Ser Val Met Val Val 50 55 60				192
aat ggc att gta ata gta ctg aac cca gat gtt tat aca aaa aat aaa Asn Gly Ile Val Ile Val Leu Asn Pro Asp Val Tyr Thr Lys Asn Lys 65 70 75 80				240
caa cag ata gtc att ttt acc ttc tgg aca ttt gcc aac tac tta aat Gln Gln Ile Val Ile Phe Thr Phe Trp Thr Phe Ala Asn Tyr Leu Asn 85 90 95				288
atg tgg att acc acc tgc ctt aat gtc ttc tat ttt ctg aag ata gcc Met Trp Ile Thr Thr Cys Leu Asn Val Phe Tyr Phe Leu Lys Ile Ala 100 105 110				336
agt tcc tct cat cca ctt ttt ctc tgg ctg aag tgg aaa att gat atg Ser Ser Ser His Pro Leu Phe Leu Trp Leu Lys Trp Lys Ile Asp Met 115 120 125				384
gtg gtg cac tgg atc ctg ctg gga tgc ttt gcc att tcc ttg ttg gtc Val Val His Trp Ile Leu Leu Gly Cys Phe Ala Ile Ser Leu Leu Val 130 135 140				432
agc ctt ata gca gca ata gta ctg agt tgt gat tat agg ttt cat gca Ser Leu Ile Ala Ala Ile Val Leu Ser Cys Asp Tyr Arg Phe His Ala 145 150 155 160				480
att gcc aaa cat aaa aga aac att act gaa atg ttc cat gtg agt aaa Ile Ala Lys His Lys Arg Asn Ile Thr Glu Met Phe His Val Ser Lys 165 170 175				528
ata cca tac ttt gaa ccc ttg act ctc ttt aac ctg ttt gca att gtc Ile Pro Tyr Phe Glu Pro Leu Thr Leu Phe Asn Leu Phe Ala Ile Val 180 185 190				576
cca ttt att gtg tca ctg ata tca ttt ttc ctt tta gta aga tct tta Pro Phe Ile Val Ser Leu Ile Ser Phe Phe Leu Leu Val Arg Ser Leu 195 200 205				624
tgg aga cat acc aag caa ata aaa ctc tat gct acc ggc agt aga gac Trp Arg His Thr Lys Gln Ile Lys Leu Tyr Ala Thr Gly Ser Arg Asp 210 215 220				672
ccc agc aca gaa gtt cat gtg aga gcc att aaa act atg act tca ttt Pro Ser Thr Glu Val His Val Arg Ala Ile Lys Thr Met Thr Ser Phe 225 230 235 240				720
atc ttc ttt ttt ttc cta tac tat att tct tct att ttg atg acc ttt Ile Phe Phe Phe Phe Phe Leu Tyr Tyr Ile Ser Ser Ile Leu Met Thr Phe 245 250 255				768

agc tat ctt atg aca aaa tac aag tta gct gtg gag ttt gga gag att 816  
 Ser Tyr Leu Met Thr Lys Tyr Lys Leu Ala Val Glu Phe Gly Glu Ile  
                   260                                  265                                  270

gca gca att ctc tac ccc ttg ggt cac tca ctt att tta att gtt tta 864  
 Ala Ala Ile Leu Tyr Pro Leu Gly His Ser Leu Ile Leu Ile Val Leu  
                   275                                  280                                  285

aat aat aaa ctg agg cag aca ttt gtc aga atg ctg aca tgt aga aaa 912  
 Asn Asn Lys Leu Arg Gln Thr Phe Val Arg Met Leu Thr Cys Arg Lys  
                   290                                  295                                  300

att gcc tgc gtg ata tga 930  
 Ile Ala Cys Val Ile  
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Phe Ile Leu Gly Ile Leu Gly Asn Gly Tyr Ile Ala Leu Val Asn Trp  
                   20                                  25                                  30

Ile Asp Trp Ile Lys Lys Lys Lys Ile Ser Thr Val Asp Tyr Ile Phe  
                   35                                  40                                  45

Thr Asn Leu Val Ile Ala Arg Ile Cys Leu Ile Ser Val Met Val Val  
                   50                                  55                                  60

Asn Gly Ile Val Ile Val Leu Asn Pro Asp Val Tyr Thr Lys Asn Lys  
 65                                  70                                  75                                  80

Gln Gln Ile Val Ile Phe Thr Phe Trp Thr Phe Ala Asn Tyr Leu Asn  
                   85                                  90                                  95

Met Trp Ile Thr Thr Cys Leu Asn Val Phe Tyr Phe Leu Lys Ile Ala  
                   100                                  105                                  110

Ser Ser Ser His Pro Leu Phe Leu Trp Leu Lys Trp Lys Ile Asp Met  
                   115                                  120                                  125

Val Val His Trp Ile Leu Leu Gly Cys Phe Ala Ile Ser Leu Leu Val  
                   130                                  135                                  140

Ser Leu Ile Ala Ala Ile Val Leu Ser Cys Asp Tyr Arg Phe His Ala  
145 150 155 160

Ile Ala Lys His Lys Arg Asn Ile Thr Glu Met Phe His Val Ser Lys  
165 170 175

Ile Pro Tyr Phe Glu Pro Leu Thr Leu Phe Asn Leu Phe Ala Ile Val  
180 185 190

Pro Phe Ile Val Ser Leu Ile Ser Phe Phe Leu Leu Val Arg Ser Leu  
195 200 205

Trp Arg His Thr Lys Gln Ile Lys Leu Tyr Ala Thr Gly Ser Arg Asp  
210 215 220

Pro Ser Thr Glu Val His Val Arg Ala Ile Lys Thr Met Thr Ser Phe  
225 230 235 240

Ile Phe Phe Phe Phe Leu Tyr Tyr Ile Ser Ser Ile Leu Met Thr Phe  
245 250 255

Ser Tyr Leu Met Thr Lys Tyr Lys Leu Ala Val Glu Phe Gly Glu Ile  
260 265 270

Ala Ala Ile Leu Tyr Pro Leu Gly His Ser Leu Ile Leu Ile Val Leu  
275 280 285

Asn Asn Lys Leu Arg Gln Thr Phe Val Arg Met Leu Thr Cys Arg Lys  
290 295 300

Ile Ala Cys Val Ile  
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Met Pro Ser Ala Ile Glu Ala Ile Tyr Ile Ile Leu Ile Ala Gly Glu	
1 5 10 15	
ttg acc ata ggg att tgg gga aat gga ttc att gta cta gtt aac tgc	96
Leu Thr Ile Gly Ile Trp Gly Asn Gly Phe Ile Val Leu Val Asn Cys	
20 25 30	
att gac tgg ctc aaa aga aga gat att tcc ttg att gac atc atc ctg	144
Ile Asp Trp Leu Lys Arg Arg Asp Ile Ser Leu Ile Asp Ile Ile Leu	
35 40 45	
atc agc ttg gcc atc tcc aga atc tgt ctg ctg tgt gta ata tca tta	192
Ile Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Ser Leu	
50 55 60	
gat ggc ttc ttt atg ctg ctc ttt cca ggt aca tat ggc aat agc gtg	240
Asp Gly Phe Phe Met Leu Leu Phe Pro Gly Thr Tyr Gly Asn Ser Val	
65 70 75 80	
cta gta agc att gtg aat gtt gtc tgg aca ttt gcc aat aat tca agt	288
Leu Val Ser Ile Val Asn Val Val Trp Thr Phe Ala Asn Asn Ser Ser	
85 90 95	
ctc tgg ttt act tct tgc ctc agt atc ttc tat tta ctc aag ata gcc	336
Leu Trp Phe Thr Ser Cys Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala	
100 105 110	
aat ata tcg cac cca ttt ttc ttc tgg ctg aag cta aag atc aac aag	384
Asn Ile Ser His Pro Phe Phe Phe Trp Leu Lys Leu Lys Ile Asn Lys	
115 120 125	

gtc atg ctt gcg att ctt ctg ggg tcc ttt ctt atc tct tta att att 432  
 Val Met Leu Ala Ile Leu Leu Gly Ser Phe Leu Ile Ser Leu Ile Ile  
 130 135 140

agt gtt cca aag aat gat gat atg tgg tat cac ctt ttc aaa gtc agt 480  
 Ser Val Pro Lys Asn Asp Asp Met Trp Tyr His Leu Phe Lys Val Ser  
 145 150 155 160

cat gaa gaa aac att act tgg aaa ttc aaa gtg agt aaa att cca ggt 528  
 His Glu Glu Asn Ile Thr Trp Lys Phe Lys Val Ser Lys Ile Pro Gly  
 165 170 175

act ttc aaa cag tta acc ctg aac ctg ggg gtg atg gtt ccc ttt atc 576  
 Thr Phe Lys Gln Leu Thr Leu Asn Leu Gly Val Met Val Pro Phe Ile  
 180 185 190

ctt tgc ctg atc tca ttt ttc ttg tta ctt ttc tcc cta gtt aga cac 624  
 Leu Cys Leu Ile Ser Phe Phe Leu Leu Leu Phe Ser Leu Val Arg His  
 195 200 205

acc aag cag att cga ctg cat gct aca ggg ttc aga gac ccc agt aca 672  
 Thr Lys Gln Ile Arg Leu His Ala Thr Gly Phe Arg Asp Pro Ser Thr  
 210 215 220

gag gcc cac atg agg gcc ata aag gca gtg atc atc ttt ctg ctc ctc 720  
 Glu Ala His Met Arg Ala Ile Lys Ala Val Ile Ile Phe Leu Leu Leu  
 225 230 235 240

ctc atc gtg tac tac cca gtc ttt ctt gtt atg acc tct agc gct ctg 768  
 Leu Ile Val Tyr Tyr Pro Val Phe Leu Val Met Thr Ser Ser Ala Leu  
 245 250 255

att cct cag gga aaa tta gtg ttg atg att ggt gac ata gta act gtc 816  
 Ile Pro Gln Gly Lys Leu Val Leu Met Ile Gly Asp Ile Val Thr Val  
 260 265 270

att ttc cca tca agc cat tca ttc att cta att atg gga aat agc aag 864  
 Ile Phe Pro Ser Ser His Ser Phe Ile Leu Ile Met Gly Asn Ser Lys  
 275 280 285

ttg agg gaa gct ttt ctg aag atg tta aga ttt gtg aag tgt ttc ctt 912  
 Leu Arg Glu Ala Phe Leu Lys Met Leu Arg Phe Val Lys Cys Phe Leu  
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aga aga aga aag cct ttt gtt cca tag 939  
 Arg Arg Arg Lys Pro Phe Val Pro  
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25

30

Ile Asp Trp Leu Lys Arg Arg Asp Ile Ser Leu Ile Asp Ile Ile Leu  
 35 40 45

Ile Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Ser Leu  
 50 55 60

Asp Gly Phe Phe Met Leu Leu Phe Pro Gly Thr Tyr Gly Asn Ser Val  
 65 70 75 80

Leu Val Ser Ile Val Asn Val Val Trp Thr Phe Ala Asn Asn Ser Ser  
 85 90 95

Leu Trp Phe Thr Ser Cys Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala  
 100 105 110

Asn Ile Ser His Pro Phe Phe Phe Trp Leu Lys Leu Lys Ile Asn Lys  
 115 120 125

Val Met Leu Ala Ile Leu Leu Gly Ser Phe Leu Ile Ser Leu Ile Ile  
 130 135 140

Ser Val Pro Lys Asn Asp Asp Met Trp Tyr His Leu Phe Lys Val Ser  
 145 150 155 160

His Glu Glu Asn Ile Thr Trp Lys Phe Lys Val Ser Lys Ile Pro Gly  
 165 170 175

Thr Phe Lys Gln Leu Thr Leu Asn Leu Gly Val Met Val Pro Phe Ile  
 180 185 190

Leu Cys Leu Ile Ser Phe Phe Leu Leu Leu Phe Ser Leu Val Arg His  
 195 200 205

Thr Lys Gln Ile Arg Leu His Ala Thr Gly Phe Arg Asp Pro Ser Thr  
 210 215 220

Glu Ala His Met Arg Ala Ile Lys Ala Val Ile Ile Phe Leu Leu Leu  
 225 230 235 240

Leu Ile Val Tyr Tyr Pro Val Phe Leu Val Met Thr Ser Ser Ala Leu  
 245 250 255

Ile Pro Gln Gly Lys Leu Val Leu Met Ile Gly Asp Ile Val Thr Val  
 260 265 270



Ile Phe Pro Ser Ser His Ser Phe Ile Leu Ile Met Gly Asn Ser Lys  
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Arg Arg Arg Lys Pro Phe Val Pro  
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Leu	Thr	Ile	Gly	Ile	Trp	Gly	Asn	Gly	Phe	Ile	Val	Leu	Val	Asn	Cys	
			20					25					30			
att	gac	tgg	ctc	aaa	aga	aga	gat	att	tcc	ttg	att	gac	atc	atc	ctg	144
Ile	Asp	Trp	Leu	Lys	Arg	Arg	Asp	Ile	Ser	Leu	Ile	Asp	Ile	Ile	Leu	
			35				40					45				
atc	agc	ttg	gcc	atc	tcc	aga	atc	tgt	ctg	ctg	tgt	gta	ata	tca	tta	192
Ile	Ser	Leu	Ala	Ile	Ser	Arg	Ile	Cys	Leu	Leu	Cys	Val	Ile	Ser	Leu	
			50			55					60					
gat	ggc	ttc	ttt	atg	ctg	ctc	ttt	cca	ggg	aca	tat	ggc	aat	agc	gtg	240
Asp	Gly	Phe	Phe	Met	Leu	Leu	Phe	Pro	Gly	Thr	Tyr	Gly	Asn	Ser	Val	
65					70				75					80		
cta	gta	agc	att	gtg	aat	gtt	gtc	tgg	aca	ttt	gcc	aat	aat	tca	agt	288
Leu	Val	Ser	Ile	Val	Asn	Val	Val	Trp	Thr	Phe	Ala	Asn	Asn	Ser	Ser	
				85				90						95		
ctc	tgg	ttt	act	tct	tgc	ctc	agt	atc	ttc	tat	tta	ctc	aag	ata	gcc	336
Leu	Trp	Phe	Thr	Ser	Cys	Leu	Ser	Ile	Phe	Tyr	Leu	Leu	Lys	Ile	Ala	
			100					105					110			
aat	ata	tgc	cac	cca	ttt	ttc	ttc	tgg	ctg	aag	cta	aag	atc	aac	aag	384
Asn	Ile	Ser	His	Pro	Phe	Phe	Phe	Trp	Leu	Lys	Leu	Lys	Ile	Asn	Lys	
			115				120					125				
gtc	atg	ctt	gcg	att	ctt	ctg	ggg	tcc	ttt	ctt	atc	tct	tta	att	att	432
Val	Met	Leu	Ala	Ile	Leu	Leu	Gly	Ser	Phe	Leu	Ile	Ser	Leu	Ile	Ile	
			130			135					140					
agt	gtt	cca	aag	aat	gat	gat	atg	tgg	tat	cac	ctt	ttc	aaa	gtc	agt	480
Ser	Val	Pro	Lys	Asn	Asp	Met	Trp	Tyr	His	Leu	Phe	Lys	Val	Ser		
145					150				155					160		
cat	gaa	gaa	aac	att	act	tgg	aaa	ttc	aaa	gtg	agt	aaa	att	cca	ggg	528
His	Glu	Glu	Asn	Ile	Thr	Trp	Lys	Phe	Lys	Val	Ser	Lys	Ile	Pro	Gly	
				165				170						175		
act	ttc	aaa	cag	tta	acc	ctg	aac	ctg	ggg	gtg	atg	gtt	ccc	ttt	atc	576
Thr	Phe	Lys	Gln	Leu	Thr	Leu	Asn	Leu	Gly	Val	Met	Val	Pro	Phe	Ile	
			180					185					190			
ctt	tgc	ctg	atc	tca	ttt	ttc	ttg	tta	ctt	ttc	tcc	cta	gtt	aga	cac	624
Leu	Cys	Leu	Ile	Ser	Phe	Phe	Leu	Leu	Leu	Phe	Ser	Leu	Val	Arg	His	
			195				200					205				
acc	aag	cag	att	cga	ctg	cat	gct	aca	ggg	ttc	aga	gac	ccc	agt	aca	672
Thr	Lys	Gln	Ile	Arg	Leu	His	Ala	Thr	Gly	Phe	Arg	Asp	Pro	Ser	Thr	
			210			215					220					
gag	gcc	cac	atg	agg	gcc	ata	aag	gca	gtg	atc	atc	ttt	ctg	ctc	ctc	720
Glu	Ala	His	Met	Arg	Ala	Ile	Lys	Ala	Val	Ile	Ile	Phe	Leu	Leu	Leu	
225					230					235				240		
ctc	atc	gtg	tac	tac	cca	gtc	ttt	ctt	gtt	atg	acc	tct	agc	gct	ctg	768
Leu	Ile	Val	Tyr	Tyr	Pro	Val	Phe	Leu	Val	Met	Thr	Ser	Ser	Ala	Leu	



Ser Val Pro Lys Asn Asp Asp Met Trp Tyr His Leu Phe Lys Val Ser  
 145 150 155 160

His Glu Glu Asn Ile Thr Trp Lys Phe Lys Val Ser Lys Ile Pro Gly  
 165 170 175

Thr Phe Lys Gln Leu Thr Leu Asn Leu Gly Val Met Val Pro Phe Ile  
 180 185 190

Leu Cys Leu Ile Ser Phe Phe Leu Leu Leu Phe Ser Leu Val Arg His  
 195 200 205

Thr Lys Gln Ile Arg Leu His Ala Thr Gly Phe Arg Asp Pro Ser Thr  
 210 215 220

Glu Ala His Met Arg Ala Ile Lys Ala Val Ile Ile Phe Leu Leu Leu  
 225 230 235 240

Leu Ile Val Tyr Tyr Pro Val Phe Leu Val Met Thr Ser Ser Ala Leu  
 245 250 255

Ile Pro Gln Gly Lys Leu Val Leu Met Ile Gly Asp Ile Val Thr Val  
 260 265 270

Ile Phe Pro Ser Ser His Ser Phe Ile Leu Ile Met Gly Asn Ser Lys  
 275 280 285

Leu Arg Glu Ala Phe Met Lys Met Leu Arg Phe Val Lys Cys Phe Leu  
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Arg Arg Arg Lys Pro Phe Val Pro  
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 Met Pro Ser Ala Ile Glu Ala Ile Tyr Ile Ile Leu Ile Ala Gly Glu  
 1 5 10 15  
 ttg acc ata ggg att tgg gga aat gga ttc att gta cta gtt aac tgc 96  
 Leu Thr Ile Gly Ile Trp Gly Asn Gly Phe Ile Val Leu Val Asn Cys  
 20 25 30  
 att gac tgg ctc aaa aga aga gat att tcc ttg att gac atc atc ctg 144  
 Ile Asp Trp Leu Lys Arg Arg Asp Ile Ser Leu Ile Asp Ile Ile Leu  
 35 40 45  
 atc agc ttg gcc atc tcc aga atc tgt ctg ctg tgt gta ata tca tta 192  
 Ile Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Ser Leu  
 50 55 60  
 gat ggc ttc ttt atg ctg ctc ttt cca ggt aca tat ggc aat agc gtg 240  
 Asp Gly Phe Phe Met Leu Leu Phe Pro Gly Thr Tyr Gly Asn Ser Val  
 65 70 75 80  
 cta gta agc att gtg aat gtt gtc tgg aca ttt gcc aat aat tca agt 288  
 Leu Val Ser Ile Val Asn Val Val Trp Thr Phe Ala Asn Asn Ser Ser  
 85 90 95  
 ctc tgg ttt act tct tgc ctc agt atc ttc tat tta ctc aag ata gcc 336  
 Leu Trp Phe Thr Ser Cys Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala  
 100 105 110  
 aat ata tcg cac cca ttt ttc ttc tgg ctg aag cta aag atc aac aag 384  
 Asn Ile Ser His Pro Phe Phe Phe Trp Leu Lys Leu Lys Ile Asn Lys  
 115 120 125

gtc atg ctt gcg att ctt ctg ggg tcc ttt ctt atc tct tta att att 432  
 Val Met Leu Ala Ile Leu Leu Gly Ser Phe Leu Ile Ser Leu Ile Ile  
 130 135 140

agt gtt cca aag aat gat gat atg tgg tat cac ctt ttc aaa gtc agt 480  
 Ser Val Pro Lys Asn Asp Asp Met Trp Tyr His Leu Phe Lys Val Ser  
 145 150 155 160

cat gaa gaa aac att act tgg aaa ttc aaa gtg agt aaa att cca ggt 528  
 His Glu Glu Asn Ile Thr Trp Lys Phe Lys Val Ser Lys Ile Pro Gly  
 165 170 175

act ttc aaa cag tta acc ctg aac ctg ggg gtg atg gtt ccc ttt atc 576  
 Thr Phe Lys Gln Leu Thr Leu Asn Leu Gly Val Met Val Pro Phe Ile  
 180 185 190

ctt tgc ctg atc tca ttt ttc ttg tta ctt ttc tcc cta gtt aga cac 624  
 Leu Cys Leu Ile Ser Phe Phe Leu Leu Leu Phe Ser Leu Val Arg His  
 195 200 205

acc aag cag att cga ctg cat gct aca ggg ttc aga gac ccc agt aca 672  
 Thr Lys Gln Ile Arg Leu His Ala Thr Gly Phe Arg Asp Pro Ser Thr  
 210 215 220

gag gcc cac atg agg gcc ata aag gca gtg atc atc ttt ctg ctc ctc 720  
 Glu Ala His Met Arg Ala Ile Lys Ala Val Ile Ile Phe Leu Leu Leu  
 225 230 235 240

ctc atc gtg tac tac cca gtc ttt ctt gtt atg acc tct agc gct ctg 768  
 Leu Ile Val Tyr Tyr Pro Val Phe Leu Val Met Thr Ser Ser Ala Leu  
 245 250 255

att cct cag gga aaa tta gtg ttg atg att ggt gac ata gta act gtc 816  
 Ile Pro Gln Gly Lys Leu Val Leu Met Ile Gly Asp Ile Val Thr Val  
 260 265 270

att ttc cca tca agc cat tca ttc att cta att atg gga aat agc aag 864  
 Ile Phe Pro Ser His Ser Phe Ile Leu Ile Met Gly Asn Ser Lys  
 275 280 285

ttt agg gaa gct ttt ctg aag atg tta aga ttt gtg aag tgt ttc ctt 912  
 Phe Arg Glu Ala Phe Leu Lys Met Leu Arg Phe Val Lys Cys Phe Leu  
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 Arg Arg Arg Lys Pro Phe Val Pro  
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Ile Asp Trp Leu Lys Arg Arg Asp Ile Ser Leu Ile Asp Ile Ile Leu  
                   35                                  40                                  45

Ile Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Ser Leu  
                   50                                  55                                  60

Asp Gly Phe Phe Met Leu Leu Phe Pro Gly Thr Tyr Gly Asn Ser Val  
   65                                  70                                  75                                  80

Leu Val Ser Ile Val Asn Val Val Trp Thr Phe Ala Asn Asn Ser Ser  
                                   85                                  90                                  95

Leu Trp Phe Thr Ser Cys Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala  
                                   100                                  105                                  110

Asn Ile Ser His Pro Phe Phe Phe Trp Leu Lys Leu Lys Ile Asn Lys  
                   115                                  120                                  125

Val Met Leu Ala Ile Leu Leu Gly Ser Phe Leu Ile Ser Leu Ile Ile  
   130                                  135                                  140

Ser Val Pro Lys Asn Asp Asp Met Trp Tyr His Leu Phe Lys Val Ser  
   145                                  150                                  155                                  160

His Glu Glu Asn Ile Thr Trp Lys Phe Lys Val Ser Lys Ile Pro Gly  
                                   165                                  170                                  175

Thr Phe Lys Gln Leu Thr Leu Asn Leu Gly Val Met Val Pro Phe Ile  
                                   180                                  185                                  190

Leu Cys Leu Ile Ser Phe Phe Leu Leu Leu Phe Ser Leu Val Arg His  
                   195                                  200                                  205

Thr Lys Gln Ile Arg Leu His Ala Thr Gly Phe Arg Asp Pro Ser Thr  
   210                                  215                                  220

Glu Ala His Met Arg Ala Ile Lys Ala Val Ile Ile Phe Leu Leu Leu  
   225                                  230                                  235                                  240

Leu Ile Val Tyr Tyr Pro Val Phe Leu Val Met Thr Ser Ser Ala Leu  
                                   245                                  250                                  255

Ile Pro Gln Gly Lys Leu Val Leu Met Ile Gly Asp Ile Val Thr Val

260

265

270

Ile Phe Pro Ser Ser His Ser Phe Ile Leu Ile Met Gly Asn Ser Lys  
275 280 285

Phe Arg Glu Ala Phe Leu Lys Met Leu Arg Phe Val Lys Cys Phe Leu  
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Arg Arg Arg Lys Pro Phe Val Pro  
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att gac tgg ctc aaa aga aga gat att tcc ttg att gac atc atc ctg Ile Asp Trp Leu Lys Arg Arg Asp Ile Ser Leu Ile Asp Ile Ile Leu 35 40 45	144
atc agc ttg gcc atc tcc aga atc tgt ctg ctg tgt gta ata tca tta Ile Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Ser Leu 50 55 60	192
gat ggc ttc ttt atg ctg ctc ttt cca ggt aca tat ggc aat agc gtg Asp Gly Phe Phe Met Leu Leu Phe Pro Gly Thr Tyr Gly Asn Ser Val 65 70 75 80	240
cta gta agc att gtg aat gtt gtc tgg aca ttt gcc aat aat tca agt Leu Val Ser Ile Val Asn Val Val Trp Thr Phe Ala Asn Asn Ser Ser 85 90 95	288
ctc tgg ttt act tct tgc ctc agt atc ttc tat tta ctc aag ata gcc Leu Trp Phe Thr Ser Cys Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala 100 105 110	336
aat ata tgc cac cca ttt ttc ttc tgg ctg aag cta aag atc aac aag Asn Ile Ser His Pro Phe Phe Phe Trp Leu Lys Leu Lys Ile Asn Lys 115 120 125	384
gtc atg ctt gcg att ctt ctg ggg tcc ttt ctt atc tct tta att att Val Met Leu Ala Ile Leu Leu Gly Ser Phe Leu Ile Ser Leu Ile Ile 130 135 140	432
agt gtt cca aag aat gat gat atg tgg tat cac ctt ttc aaa gtc agt Ser Val Pro Lys Asn Asp Asp Met Trp Tyr His Leu Phe Lys Val Ser 145 150 155 160	480
cat gaa gaa aac att act tgg aaa ttc aaa gtg agt aaa att cca ggt His Glu Glu Asn Ile Thr Trp Lys Phe Lys Val Ser Lys Ile Pro Gly 165 170 175	528
act ttc aaa cag tta acc ctg aac ctg ggg gcg atg gtt ccc ttt atc Thr Phe Lys Gln Leu Thr Leu Asn Leu Gly Ala Met Val Pro Phe Ile 180 185 190	576
ctt tgc ctg atc tca ttt ttc ttg tta ctt ttc tcc cta gtt aga cac Leu Cys Leu Ile Ser Phe Phe Leu Leu Leu Phe Ser Leu Val Arg His 195 200 205	624
acc aag cag att cga ctg cat gct aca ggg ttc aga gac ccc agt aca Thr Lys Gln Ile Arg Leu His Ala Thr Gly Phe Arg Asp Pro Ser Thr 210 215 220	672
gag gcc cac atg agg gcc ata aag gca gtg atc atc ttt ctg ctc ctc Glu Ala His Met Arg Ala Ile Lys Ala Val Ile Ile Phe Leu Leu Leu 225 230 235 240	720
ctc atc gtg tac tac cca gtc ttt ctt gtt atg acc tct agc gct ctg	768

198/447

Leu Ile Val Tyr Tyr Pro Val Phe Leu Val Met Thr Ser Ser Ala Leu  
 245 250 255  
 att cct cag gga aaa tta gtg ttg atg att ggt gac ata gta act gtc 816  
 Ile Pro Gln Gly Lys Leu Val Leu Met Ile Gly Asp Ile Val Thr Val  
 260 265 270  
 att ttc cca tca agc cat tca ttc att cta att atg gga aat agc aag 864  
 Ile Phe Pro Ser Ser His Ser Phe Ile Leu Ile Met Gly Asn Ser Lys  
 275 280 285  
 ttg agg gaa gct ttt ctg aag atg tta aga ttt gtg aag tgt ttc ctt 912  
 Leu Arg Glu Ala Phe Leu Lys Met Leu Arg Phe Val Lys Cys Phe Leu  
 290 295 300  
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 Arg Arg Arg Lys Pro Phe Val Pro  
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 Ile Asp Trp Leu Lys Arg Arg Asp Ile Ser Leu Ile Asp Ile Ile Leu  
 35 40 45  
 Ile Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Ser Leu  
 50 55 60  
 Asp Gly Phe Phe Met Leu Leu Phe Pro Gly Thr Tyr Gly Asn Ser Val  
 65 70 75 80  
 Leu Val Ser Ile Val Asn Val Val Trp Thr Phe Ala Asn Asn Ser Ser  
 85 90 95  
 Leu Trp Phe Thr Ser Cys Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala  
 100 105 110  
 Asn Ile Ser His Pro Phe Phe Phe Trp Leu Lys Leu Lys Ile Asn Lys  
 115 120 125  
 Val Met Leu Ala Ile Leu Leu Gly Ser Phe Leu Ile Ser Leu Ile Ile  
 130 135 140

Ser Val Pro Lys Asn Asp Asp Met Trp Tyr His Leu Phe Lys Val Ser  
 145 150 155 160

His Glu Glu Asn Ile Thr Trp Lys Phe Lys Val Ser Lys Ile Pro Gly  
 165 170 175

Thr Phe Lys Gln Leu Thr Leu Asn Leu Gly Ala Met Val Pro Phe Ile  
 180 185 190

Leu Cys Leu Ile Ser Phe Phe Leu Leu Leu Phe Ser Leu Val Arg His  
 195 200 205

Thr Lys Gln Ile Arg Leu His Ala Thr Gly Phe Arg Asp Pro Ser Thr  
 210 215 220

Glu Ala His Met Arg Ala Ile Lys Ala Val Ile Ile Phe Leu Leu Leu  
 225 230 235 240

Leu Ile Val Tyr Tyr Pro Val Phe Leu Val Met Thr Ser Ser Ala Leu  
 245 250 255

Ile Pro Gln Gly Lys Leu Val Leu Met Ile Gly Asp Ile Val Thr Val  
 260 265 270

Ile Phe Pro Ser Ser His Ser Phe Ile Leu Ile Met Gly Asn Ser Lys  
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Leu Arg Glu Ala Phe Leu Lys Met Leu Arg Phe Val Lys Cys Phe Leu  
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Arg Arg Arg Lys Pro Phe Val Pro  
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 ttg acc ata ggg att tgg gga aat gga ttc att gta cta gtt aac tgc 96  
 Leu Thr Ile Gly Ile Trp Gly Asn Gly Phe Ile Val Leu Val Asn Cys  
 20 25 30  
 att gac tgg ctc aaa aga aga gat att tcc ttg att gac atc atc ctg 144  
 Ile Asp Trp Leu Lys Arg Arg Asp Ile Ser Leu Ile Asp Ile Ile Leu  
 35 40 45  
 atc agc ttg gcc atc tcc aga atc tgt ctg ctg tgt gta ata tca tta 192  
 Ile Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Ser Leu  
 50 55 60  
 gat ggc ttc ttt atg ctg ctc ttt cca ggt aca tat ggc aat agc gtg 240  
 Asp Gly Phe Phe Met Leu Leu Phe Pro Gly Thr Tyr Gly Asn Ser Val  
 65 70 75 80  
 cta gta agc att gtg aat gtt gtc tgg aca ttt gcc aat aat tca agt 288  
 Leu Val Ser Ile Val Asn Val Val Trp Thr Phe Ala Asn Asn Ser Ser  
 85 90 95  
 ctc tgg ttt act tct tgc ctc agt atc ttc tat tta ctc aag ata gcc 336  
 Leu Trp Phe Thr Ser Cys Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala  
 100 105 110  
 aat ata tcg cac cca ttt ttc ttc tgg ctg aag cta aag atc aac aag 384  
 Asn Ile Ser His Pro Phe Phe Phe Trp Leu Lys Leu Lys Ile Asn Lys

115	120	125	
gtc atg ctt gcg att ctt ctg ggg tcc ttt ctt atc tct tta att att Val Met Leu Ala Ile Leu Leu Gly Ser Phe Leu Ile Ser Leu Ile Ile 130 135 140			432
agt gtt cca aag aat gat gat atg tgg tat cac ctt ttc aaa gtc agt Ser Val Pro Lys Asn Asp Asp Met Trp Tyr His Leu Phe Lys Val Ser 145 150 155 160			480
cat gaa gaa aac att act tgg aaa ttc aaa gtg agt aaa att cca ggt His Glu Glu Asn Ile Thr Trp Lys Phe Lys Val Ser Lys Ile Pro Gly 165 170 175			528
act ttc aaa cag tta acc ctg aac ctg ggg gcg atg gtt ccc ttt atc Thr Phe Lys Gln Leu Thr Leu Asn Leu Gly Ala Met Val Pro Phe Ile 180 185 190			576
ctt tgc ctg atc tca ttt ttc ttg tta ctt ttc tcc cta gtt aga cac Leu Cys Leu Ile Ser Phe Phe Leu Leu Leu Phe Ser Leu Val Arg His 195 200 205			624
acc aag cag att cga ctg cat gct aca ggg ttc aga gac ccc agt aca Thr Lys Gln Ile Arg Leu His Ala Thr Gly Phe Arg Asp Pro Ser Thr 210 215 220			672
gag gcc cac atg agg gcc ata aag aca gtg atc atc ttt ctg ctc ctc Glu Ala His Met Arg Ala Ile Lys Thr Val Ile Ile Phe Leu Leu Leu 225 230 235 240			720
ctc atc gtg tac tac cca gtc ttt ctt gtt atg acc tct agc gct ctg Leu Ile Val Tyr Tyr Pro Val Phe Leu Val Met Thr Ser Ser Ala Leu 245 250 255			768
att cct cag gga aaa tta gtg ttg atg att ggt gac ata gta act gtc Ile Pro Gln Gly Lys Leu Val Leu Met Ile Gly Asp Ile Val Thr Val 260 265 270			816
att ttc cca tca agc cat tca ttc att cta att atg gga aat agc aag Ile Phe Pro Ser Ser His Ser Phe Ile Leu Ile Met Gly Asn Ser Lys 275 280 285			864
ttg agg gaa gct ttt ctg aag atg tta aga ttt gtg aag tgt ttc ctt Leu Arg Glu Ala Phe Leu Lys Met Leu Arg Phe Val Lys Cys Phe Leu 290 295 300			912
aga aga aga aag cct ttt gtt cca tag Arg Arg Arg Lys Pro Phe Val Pro 305 310			939

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<400> 118

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Leu Thr Ile Gly Ile Trp Gly Asn Gly Phe Ile Val Leu Val Asn Cys  
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Ile Asp Trp Leu Lys Arg Arg Asp Ile Ser Leu Ile Asp Ile Ile Leu  
35 40 45

Ile Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Ser Leu  
50 55 60

Asp Gly Phe Phe Met Leu Leu Phe Pro Gly Thr Tyr Gly Asn Ser Val  
65 70 75 80

Leu Val Ser Ile Val Asn Val Val Trp Thr Phe Ala Asn Asn Ser Ser  
85 90 95

Leu Trp Phe Thr Ser Cys Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala  
100 105 110

Asn Ile Ser His Pro Phe Phe Phe Trp Leu Lys Leu Lys Ile Asn Lys  
115 120 125

Val Met Leu Ala Ile Leu Leu Gly Ser Phe Leu Ile Ser Leu Ile Ile  
130 135 140

Ser Val Pro Lys Asn Asp Asp Met Trp Tyr His Leu Phe Lys Val Ser  
145 150 155 160

His Glu Glu Asn Ile Thr Trp Lys Phe Lys Val Ser Lys Ile Pro Gly  
165 170 175

Thr Phe Lys Gln Leu Thr Leu Asn Leu Gly Ala Met Val Pro Phe Ile  
180 185 190

Leu Cys Leu Ile Ser Phe Phe Leu Leu Leu Phe Ser Leu Val Arg His  
195 200 205

Thr Lys Gln Ile Arg Leu His Ala Thr Gly Phe Arg Asp Pro Ser Thr  
210 215 220

Glu Ala His Met Arg Ala Ile Lys Thr Val Ile Ile Phe Leu Leu Leu  
225 230 235 240

Leu Ile Val Tyr Tyr Pro Val Phe Leu Val Met Thr Ser Ser Ala Leu  
245 250 255

Ile Pro Gln Gly Lys Leu Val Leu Met Ile Gly Asp Ile Val Thr Val  
260 265 270

Ile Phe Pro Ser Ser His Ser Phe Ile Leu Ile Met Gly Asn Ser Lys  
275 280 285

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Arg Arg Arg Lys Pro Phe Val Pro  
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Val Met Leu Ala Ile Leu Leu Gly Ser Phe Leu Ile Ser Leu Ile Ile

130

135

140

Ser Val Pro Lys Asn Glu Asp Met Trp Tyr His Leu Phe Lys Val Ser  
145 150 155 160

His Glu Glu Asn Ile Thr Trp Lys Phe Lys Val Ser Lys Ile Pro Gly  
165 170 175

Thr Phe Lys Gln Leu Thr Leu Asn Leu Gly Val Met Val Pro Phe Ile  
180 185 190

Leu Cys Leu Ile Ser Phe Phe Leu Leu Leu Phe Ser Leu Val Arg His  
195 200 205

Thr Lys Gln Ile Arg Leu His Ala Thr Gly Phe Arg Asp Pro Ser Thr  
210 215 220

Glu Ala His Met Arg Ala Ile Lys Ala Val Ile Ile Phe Leu Leu Leu  
225 230 235 240

Leu Ile Val Tyr Tyr Pro Val Phe Leu Val Met Thr Ser Ser Ala Leu  
245 250 255

Ile Pro Gln Gly Lys Leu Val Leu Met Ile Gly Asp Ile Val Thr Val  
260 265 270

Ile Phe Pro Ser Ser His Ser Phe Ile Leu Ile Met Gly Asn Ser Lys  
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ttg acc ata ggg att tgg gga aat gga ttc att gta cta gtt aac tgc		96
Leu Thr Ile Gly Ile Trp Gly Asn Gly Phe Ile Val Leu Val Asn Cys		
20 25 30		
att gac tgg ctc aaa aga aga gat att tcc ttg att gac atc atc ctg		144
Ile Asp Trp Leu Lys Arg Arg Asp Ile Ser Leu Ile Asp Ile Ile Leu		
35 40 45		
atc agc ttg gcc atc tcc aga atc tgt ctg ctg tgt gta ata tca tta		192
Ile Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Ser Leu		
50 55 60		
gat ggc ttc ttt atg ctg ctc ttt cca ggt aca tat ggc aat agc gtg		240
Asp Gly Phe Phe Met Leu Leu Phe Pro Gly Thr Tyr Gly Asn Ser Val		
65 70 75 80		
cta gta agc att gtg aat gtt gtc tgg aca ttt gcc aat aat tca agt		288
Leu Val Ser Ile Val Asn Val Val Trp Thr Phe Ala Asn Asn Ser Ser		
85 90 95		
ctc tgg ttt act tct tgc ctc agt atc ttc tat tta ctc aag ata gcc		336
Leu Trp Phe Thr Ser Cys Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala		
100 105 110		
aat ata tcg cac cca ttt ttc ttc tgg ctg aag cta aag atc aaa aag		384

Asn	Ile	Ser	His	Pro	Phe	Phe	Phe	Trp	Leu	Lys	Leu	Lys	Ile	Lys	Lys		
	115						120					125					
gtc	atg	ctt	gcg	att	ctt	ctg	ggg	tcc	ttt	ctt	atc	tct	tta	att	att		432
Val	Met	Leu	Ala	Ile	Leu	Leu	Gly	Ser	Phe	Leu	Ile	Ser	Leu	Ile	Ile		
	130					135					140						
agt	gtt	cca	aag	aat	gat	gat	atg	tgg	tat	cac	ctt	ttc	aaa	gtc	agt		480
Ser	Val	Pro	Lys	Asn	Asp	Asp	Met	Trp	Tyr	His	Leu	Phe	Lys	Val	Ser		
	145				150					155					160		
cat	gaa	gaa	aac	att	act	tgg	aaa	ttc	aaa	gtg	agt	aaa	att	cca	ggg		528
His	Glu	Glu	Asn	Ile	Thr	Trp	Lys	Phe	Lys	Val	Ser	Lys	Ile	Pro	Gly		
				165					170					175			
act	ttc	aaa	cag	tta	acc	ctg	aac	ctg	ggg	gtg	atg	gtt	ccc	ttt	atc		576
Thr	Phe	Lys	Gln	Leu	Thr	Leu	Asn	Leu	Gly	Val	Met	Val	Pro	Phe	Ile		
			180					185					190				
ctt	tgc	ctg	atc	tca	ttt	ttc	ttg	tta	ctt	ttc	tcc	cta	gtt	aga	cac		624
Leu	Cys	Leu	Ile	Ser	Phe	Phe	Leu	Leu	Leu	Phe	Ser	Leu	Val	Arg	His		
		195					200						205				
acc	aag	cag	att	cga	ctg	cat	gct	aca	ggg	ttc	aga	gac	ccc	agt	aca		672
Thr	Lys	Gln	Ile	Arg	Leu	His	Ala	Thr	Gly	Phe	Arg	Asp	Pro	Ser	Thr		
	210					215					220						
gag	gcc	cac	atg	agg	gcc	ata	aag	gca	gtg	atc	atc	ttt	ctg	ctc	ctc		720
Glu	Ala	His	Met	Arg	Ala	Ile	Lys	Ala	Val	Ile	Ile	Phe	Leu	Leu	Leu		
	225				230				235					240			
ctc	atc	gtg	tac	tac	cca	gtc	ttt	ctt	gtt	atg	acc	tct	agc	gct	ctg		768
Leu	Ile	Val	Tyr	Tyr	Pro	Val	Phe	Leu	Val	Met	Thr	Ser	Ser	Ala	Leu		
				245					250					255			
att	cct	cag	gga	aaa	tta	gtg	ttg	atg	att	ggg	gac	ata	gta	act	gtc		816
Ile	Pro	Gln	Gly	Lys	Leu	Val	Leu	Met	Ile	Gly	Asp	Ile	Val	Thr	Val		
			260					265					270				
att	ttc	cca	tca	agc	cat	tca	ttc	att	cta	att	atg	gga	aat	agc	aag		864
Ile	Phe	Pro	Ser	Ser	His	Ser	Phe	Ile	Leu	Ile	Met	Gly	Asn	Ser	Lys		
		275					280					285					
ttg	agg	gaa	gct	ttt	ctg	aag	atg	tta	aga	ttt	gtg	aag	tgt	ttc	ctt		912
Leu	Arg	Glu	Ala	Phe	Leu	Lys	Met	Leu	Arg	Phe	Val	Lys	Cys	Phe	Leu		
	290					295					300						
aga	aga	aga	aag	cct	ttt	gtt	cca	tag									939
Arg	Arg	Arg	Lys	Pro	Phe	Val	Pro										
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                   20                                  25                                  30

Ile Asp Trp Leu Lys Arg Arg Asp Ile Ser Leu Ile Asp Ile Ile Leu  
                   35                                  40                                  45

Ile Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Ser Leu  
                   50                                  55                                  60

Asp Gly Phe Phe Met Leu Leu Phe Pro Gly Thr Tyr Gly Asn Ser Val  
                   65                                  70                                  75                                  80

Leu Val Ser Ile Val Asn Val Val Trp Thr Phe Ala Asn Asn Ser Ser  
                                   85                                  90                                  95

Leu Trp Phe Thr Ser Cys Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala  
                                   100                                  105                                  110

Asn Ile Ser His Pro Phe Phe Phe Trp Leu Lys Leu Lys Ile Lys Lys  
                   115                                  120                                  125

Val Met Leu Ala Ile Leu Leu Gly Ser Phe Leu Ile Ser Leu Ile Ile  
                   130                                  135                                  140

Ser Val Pro Lys Asn Asp Asp Met Trp Tyr His Leu Phe Lys Val Ser  
                   145                                  150                                  155                                  160

His Glu Glu Asn Ile Thr Trp Lys Phe Lys Val Ser Lys Ile Pro Gly  
                                   165                                  170                                  175

Thr Phe Lys Gln Leu Thr Leu Asn Leu Gly Val Met Val Pro Phe Ile  
                   180                                  185                                  190

Leu Cys Leu Ile Ser Phe Phe Leu Leu Leu Phe Ser Leu Val Arg His  
                   195                                  200                                  205

Thr Lys Gln Ile Arg Leu His Ala Thr Gly Phe Arg Asp Pro Ser Thr  
                   210                                  215                                  220

Glu Ala His Met Arg Ala Ile Lys Ala Val Ile Ile Phe Leu Leu Leu  
                   225                                  230                                  235                                  240

Leu Ile Val Tyr Tyr Pro Val Phe Leu Val Met Thr Ser Ser Ala Leu  
                   245                                  250                                  255

Ile Pro Gln Gly Lys Leu Val Leu Met Ile Gly Asp Ile Val Thr Val  
260 265 270

Ile Phe Pro Ser Ser His Ser Phe Ile Leu Ile Met Gly Asn Ser Lys  
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ttg acc ata ggg att tgg gga aat gga ttc att gta cta gtt aac tgc	96
Leu Thr Ile Gly Ile Trp Gly Asn Gly Phe Ile Val Leu Val Asn Cys	
20 25 30	
att gac tgg ctc aaa aga aga gat att tcc ttg att gac atc atc ctg	144
Ile Asp Trp Leu Lys Arg Arg Asp Ile Ser Leu Ile Asp Ile Ile Leu	
35 40 45	
atc agc ttg gcc atc tcc aga atc tgt ctg ctg tgt gta ata tca tta	192
Ile Ser Leu Ala Ile Ser Arg Ile Cys Leu Leu Cys Val Ile Ser Leu	
50 55 60	
gat ggc tta ttt atg ctg ctc ttt cca ggt aca tat ggc aat agc gtg	240
Asp Gly Leu Phe Met Leu Phe Pro Gly Thr Tyr Gly Asn Ser Val	
65 70 75 80	
cta gta agc att gtg aat gtt gtc tgg aca ttt gcc aat aat tca agt	288
Leu Val Ser Ile Val Asn Val Val Trp Thr Phe Ala Asn Asn Ser Ser	
85 90 95	
ctc tgg ttt act tct tgc ctc agt atc ttc tat tta ctc aag ata gcc	336
Leu Trp Phe Thr Ser Cys Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala	
100 105 110	
aat ata tcg cac cca ttt ttc ttc tgg ctg aag cta aag atc aac aag	384
Asn Ile Ser His Pro Phe Phe Phe Trp Leu Lys Leu Lys Ile Asn Lys	
115 120 125	
gtc atg ctt gcg att ctt ctg ggg tcc ttt ctt atc tct tta att att	432
Val Met Leu Ala Ile Leu Leu Gly Ser Phe Leu Ile Ser Leu Ile Ile	
130 135 140	
agt gtt cca aag aat gat gat atg tgg tat cac ctt ttc aaa gtc agt	480
Ser Val Pro Lys Asn Asp Asp Met Trp Tyr His Leu Phe Lys Val Ser	
145 150 155 160	
cat gaa gaa aac att act tgg aaa ttc aaa gtg agt aaa att cca ggt	528
His Glu Glu Asn Ile Thr Trp Lys Phe Lys Val Ser Lys Ile Pro Gly	
165 170 175	
act ttc aaa cag tta acc ctg aac ctg ggg gtg atg gtt ccc ttt atc	576
Thr Phe Lys Gln Leu Thr Leu Asn Leu Gly Val Met Val Pro Phe Ile	
180 185 190	
ctt tgc ctg atc tca ttt ttc ttg tta ctt ttc tcc cta gtt aga cac	624
Leu Cys Leu Ile Ser Phe Phe Leu Leu Leu Phe Ser Leu Val Arg His	
195 200 205	
acc aag cag att cga ctg cat gct aca ggg ttc aga gac ccc agt aca	672
Thr Lys Gln Ile Arg Leu His Ala Thr Gly Phe Arg Asp Pro Ser Thr	
210 215 220	
gag gcc cac atg agg gcc ata aag gca gtg atc atc ttt ctg ctc ctc	720
Glu Ala His Met Arg Ala Ile Lys Ala Val Ile Ile Phe Leu Leu Leu	
225 230 235 240	

Asn Ile Ser His Pro Phe Phe Phe Trp Leu Lys Leu Lys Ile Asn Lys  
115 120 125



Val Met Leu Ala Ile Leu Leu Gly Ser Phe Leu Ile Ser Leu Ile Ile  
 130 135 140  
 Ser Val Pro Lys Asn Asp Asp Met Trp Tyr His Leu Phe Lys Val Ser  
 145 150 155 160  
 His Glu Glu Asn Ile Thr Trp Lys Phe Lys Val Ser Lys Ile Pro Gly  
 165 170 175  
 Thr Phe Lys Gln Leu Thr Leu Asn Leu Gly Val Met Val Pro Phe Ile  
 180 185 190  
 Leu Cys Leu Ile Ser Phe Phe Leu Leu Leu Phe Ser Leu Val Arg His  
 195 200 205  
 Thr Lys Gln Ile Arg Leu His Ala Thr Gly Phe Arg Asp Pro Ser Thr  
 210 215 220  
 Glu Ala His Met Arg Ala Ile Lys Ala Val Ile Ile Phe Leu Leu Leu  
 225 230 235 240  
 Leu Ile Val Tyr Tyr Pro Val Phe Leu Val Met Thr Ser Ser Ala Leu  
 245 250 255  
 Ile Pro Gln Gly Lys Leu Val Leu Met Ile Gly Asp Ile Val Thr Val  
 260 265 270  
 Ile Phe Pro Ser Ser His Ser Phe Ile Leu Ile Met Gly Asn Ser Lys  
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 Arg Arg Arg Lys Pro Phe Val Pro  
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1 5 10 15	
tca gtg ttt ggg gtt ttg ggg aat gga ttt att gga ctt gta aac tgc	96
Ser Val Phe Gly Val Leu Gly Asn Gly Phe Ile Gly Leu Val Asn Cys	
20 25 30	
att gac tgt gcc aag aat aag tta tct acg att ggc ttt att ctc acc	144
Ile Asp Cys Ala Lys Asn Lys Leu Ser Thr Ile Gly Phe Ile Leu Thr	
35 40 45	
ggc tta gct att tca aga att ttt ctg ata tgg ata ata att aca gat	192
Gly Leu Ala Ile Ser Arg Ile Phe Leu Ile Trp Ile Ile Ile Thr Asp	
50 55 60	
gga ttt ata cag ata ttc tct cca aat ata tat gcc tcc ggt aac cta	240
Gly Phe Ile Gln Ile Phe Ser Pro Asn Ile Tyr Ala Ser Gly Asn Leu	
65 70 75 80	
att gaa tat att agt tac ttt tgg gta att ggt aat caa tca agt atg	288
Ile Glu Tyr Ile Ser Tyr Phe Trp Val Ile Gly Asn Gln Ser Ser Met	
85 90 95	
tgg ttt gcc acc agc ctc agc atc ttc tat ttc ctg aag ata gca aat	336
Trp Phe Ala Thr Ser Leu Ser Ile Phe Tyr Phe Leu Lys Ile Ala Asn	
100 105 110	
ttt tcc aac tac ata ttt ctc tgg ttg aag agc aga aca aat atg gtt	384
Phe Ser Asn Tyr Ile Phe Leu Trp Leu Lys Ser Arg Thr Asn Met Val	
115 120 125	
ctt ccc ttc atg ata gta ttc tta ctt att tca tcg tta ctt aat ttt	432
Leu Pro Phe Met Ile Val Phe Leu Leu Ile Ser Ser Leu Leu Asn Phe	
130 135 140	
gca tac att gcg aag att ctt aat gat tat aaa atg aag aat gac aca	480
Ala Tyr Ile Ala Lys Ile Leu Asn Asp Tyr Lys Met Lys Asn Asp Thr	
145 150 155 160	
gtc tgg gat ctc aac atg tat aaa agt gaa tac ttt att aaa cag att	528
Val Trp Asp Leu Asn Met Tyr Lys Ser Glu Tyr Phe Ile Lys Gln Ile	
165 170 175	
ttg cta aat ctg gga gtc att ttc ttc ttt aca cta tcc cta att aca	576
Leu Leu Asn Leu Gly Val Ile Phe Phe Phe Thr Leu Ser Leu Ile Thr	
180 185 190	

215/447

tgt att ttt tta atc att tcc ctt tgg aga cac aac agg cag atg caa	624
Cys Ile Phe Leu Ile Ile Ser Leu Trp Arg His Asn Arg Gln Met Gln	
195 200 205	
tcg aat gtg aca gga ttg aga gac tcc aac aca gaa gct cat gtg aag	672
Ser Asn Val Thr Gly Leu Arg Asp Ser Asn Thr Glu Ala His Val Lys	
210 215 220	
gca atg aaa gtt ttg ata tct ttc atc atc ctc ttt atc ttg tat ttt	720
Ala Met Lys Val Leu Ile Ser Phe Ile Ile Leu Phe Ile Leu Tyr Phe	
225 230 235 240	
ata ggc atg gcc ata gaa ata tca tgt ttt act gtg cga gaa aac aaa	768
Ile Gly Met Ala Ile Glu Ile Ser Cys Phe Thr Val Arg Glu Asn Lys	
245 250 255	
ctg ctg ctt atg ttt gga atg aca acc aca gcc atc tat ccc tgg ggt	816
Leu Leu Leu Met Phe Gly Met Thr Thr Thr Ala Ile Tyr Pro Trp Gly	
260 265 270	
cac tca ttt atc tta att cta gga aac agc aag cta aag caa gcc tct	864
His Ser Phe Ile Leu Ile Leu Gly Asn Ser Lys Leu Lys Gln Ala Ser	
275 280 285	
ttg agg gta ctg cag caa ttg aag tgc tgt gag aaa agg aaa aat ctc	912
Leu Arg Val Leu Gln Gln Leu Lys Cys Cys Glu Lys Arg Lys Asn Leu	
290 295 300	
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Arg Val Thr	
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Ile Asp Cys Ala Lys Asn Lys Leu Ser Thr Ile Gly Phe Ile Leu Thr	
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Gly Leu Ala Ile Ser Arg Ile Phe Leu Ile Trp Ile Ile Ile Thr Asp	
50 55 60	
Gly Phe Ile Gln Ile Phe Ser Pro Asn Ile Tyr Ala Ser Gly Asn Leu	
65 70 75 80	
Ile Glu Tyr Ile Ser Tyr Phe Trp Val Ile Gly Asn Gln Ser Ser Met	

85

90

95

Trp Phe Ala Thr Ser Leu Ser Ile Phe Tyr Phe Leu Lys Ile Ala Asn  
 100 105 110

Phe Ser Asn Tyr Ile Phe Leu Trp Leu Lys Ser Arg Thr Asn Met Val  
 115 120 125

Leu Pro Phe Met Ile Val Phe Leu Leu Ile Ser Ser Leu Leu Asn Phe  
 130 135 140

Ala Tyr Ile Ala Lys Ile Leu Asn Asp Tyr Lys Met Lys Asn Asp Thr  
 145 150 155 160

Val Trp Asp Leu Asn Met Tyr Lys Ser Glu Tyr Phe Ile Lys Gln Ile  
 165 170 175

Leu Leu Asn Leu Gly Val Ile Phe Phe Phe Thr Leu Ser Leu Ile Thr  
 180 185 190

Cys Ile Phe Leu Ile Ile Ser Leu Trp Arg His Asn Arg Gln Met Gln  
 195 200 205

Ser Asn Val Thr Gly Leu Arg Asp Ser Asn Thr Glu Ala His Val Lys  
 210 215 220

Ala Met Lys Val Leu Ile Ser Phe Ile Ile Leu Phe Ile Leu Tyr Phe  
 225 230 235 240

Ile Gly Met Ala Ile Glu Ile Ser Cys Phe Thr Val Arg Glu Asn Lys  
 245 250 255

Leu Leu Leu Met Phe Gly Met Thr Thr Thr Ala Ile Tyr Pro Trp Gly  
 260 265 270

His Ser Phe Ile Leu Ile Leu Gly Asn Ser Lys Leu Lys Gln Ala Ser  
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Arg Val Thr  
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tca gtg ttt ggg gtt ttg ggg aat gga ttt att gga ctt gta aac tgc 96  
Ser Val Phe Gly Val Leu Gly Asn Gly Phe Ile Gly Leu Val Asn Cys  
20 25 30  
att gac tgt gcc aag aat aag tta tct acg att ggc ttt att ctc acc 144  
Ile Asp Cys Ala Lys Asn Lys Leu Ser Thr Ile Gly Phe Ile Leu Thr  
35 40 45  
ggc tta gct att tca aga att ttt ctg ata tgg ata ata att aca gat 192  
Gly Leu Ala Ile Ser Arg Ile Phe Leu Ile Trp Ile Ile Ile Thr Asp  
50 55 60  
gga ttt ata cag ata ttc tct cca aat ata tat gcc tcc ggt aac cta 240  
Gly Phe Ile Gln Ile Phe Ser Pro Asn Ile Tyr Ala Ser Gly Asn Leu  
65 70 75 80  
att gaa tat att agt tac ttt tgg gta att ggt aat caa tca agt atg 288  
Ile Glu Tyr Ile Ser Tyr Phe Trp Val Ile Gly Asn Gln Ser Ser Met  
85 90 95  
tgg ttt gcc acc agc ctc agc atc ttc tat ttc ctg aag ata gca aat 336  
Trp Phe Ala Thr Ser Leu Ser Ile Phe Tyr Phe Leu Lys Ile Ala Asn  
100 105 110  
ttt tcc aac tac ata ttt ctc tgg ttg aag agc aga aca aat atg gtt 384  
Phe Ser Asn Tyr Ile Phe Leu Trp Leu Lys Ser Arg Thr Asn Met Val  
115 120 125  
ctt ccc ttc atg ata gta ttc tta ctt att tca ttc tta ctt aat ttt 432  
Leu Pro Phe Met Ile Val Phe Leu Leu Ile Ser Ser Leu Leu Asn Phe  
130 135 140  
gca tac att gcg aag att ctt aat gat tat aaa atg aag aat gac aca 480

Ala Tyr Ile Ala Lys Ile Leu Asn Asp Tyr Lys Met Lys Asn Asp Thr 145 150 155 160	
gtc tgg gat ctc aac atg tat aaa agt gaa tac ttt att aaa cag att Val Trp Asp Leu Asn Met Tyr Lys Ser Glu Tyr Phe Ile Lys Gln Ile 165 170 175	528
ttg cta aat ctg gga gtc att ttc ttc ttt aca cta tcc cta att aca Leu Leu Asn Leu Gly Val Ile Phe Phe Phe Thr Leu Ser Leu Ile Thr 180 185 190	576
tgt att ttt tta atc att tcc ctt tgg aga cac aac agg cag atg caa Cys Ile Phe Leu Ile Ile Ser Leu Trp Arg His Asn Arg Gln Met Gln 195 200 205	624
tcg aat gtg aca gga ttg aga gac tcc aac aca gaa gct cat gtg aag Ser Asn Val Thr Gly Leu Arg Asp Ser Asn Thr Glu Ala His Val Lys 210 215 220	672
gca atg aaa gtt ttg ata cct ttc atc atc ctc ttt atc ttg tat ttt Ala Met Lys Val Leu Ile Pro Phe Ile Ile Leu Phe Ile Leu Tyr Phe 225 230 235 240	720
ata ggc atg gcc ata gaa ata tca tgt ttt act gtg cga gaa aac aaa Ile Gly Met Ala Ile Glu Ile Ser Cys Phe Thr Val Arg Glu Asn Lys 245 250 255	768
ctg ctg ctt atg ttt gga atg aca acc aca gcc atc tat ccc tgg ggt Leu Leu Leu Met Phe Gly Met Thr Thr Thr Ala Ile Tyr Pro Trp Gly 260 265 270	816
cac tca ttt atc tta att cta gga aac agc aag cta aag caa gcc tct His Ser Phe Ile Leu Ile Leu Gly Asn Ser Lys Leu Lys Gln Ala Ser 275 280 285	864
ttg agg gta ctg cag caa ttg aag tgc tgt gag aaa agg aaa aat ctc Leu Arg Val Leu Gln Gln Leu Lys Cys Cys Glu Lys Arg Lys Asn Leu 290 295 300	912
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Gly Leu Ala Ile Ser Arg Ile Phe Leu Ile Trp Ile Ile Ile Thr Asp  
 50 55 60

Gly Phe Ile Gln Ile Phe Ser Pro Asn Ile Tyr Ala Ser Gly Asn Leu  
 65 70 75 80

Ile Glu Tyr Ile Ser Tyr Phe Trp Val Ile Gly Asn Gln Ser Ser Met  
 85 90 95

Trp Phe Ala Thr Ser Leu Ser Ile Phe Tyr Phe Leu Lys Ile Ala Asn  
 100 105 110

Phe Ser Asn Tyr Ile Phe Leu Trp Leu Lys Ser Arg Thr Asn Met Val  
 115 120 125

Leu Pro Phe Met Ile Val Phe Leu Leu Ile Ser Ser Leu Leu Asn Phe  
 130 135 140

Ala Tyr Ile Ala Lys Ile Leu Asn Asp Tyr Lys Met Lys Asn Asp Thr  
 145 150 155 160

Val Trp Asp Leu Asn Met Tyr Lys Ser Glu Tyr Phe Ile Lys Gln Ile  
 165 170 175

Leu Leu Asn Leu Gly Val Ile Phe Phe Phe Thr Leu Ser Leu Ile Thr  
 180 185 190

Cys Ile Phe Leu Ile Ile Ser Leu Trp Arg His Asn Arg Gln Met Gln  
 195 200 205

Ser Asn Val Thr Gly Leu Arg Asp Ser Asn Thr Glu Ala His Val Lys  
 210 215 220

Ala Met Lys Val Leu Ile Pro Phe Ile Ile Leu Phe Ile Leu Tyr Phe  
 225 230 235 240

Ile Gly Met Ala Ile Glu Ile Ser Cys Phe Thr Val Arg Glu Asn Lys  
 245 250 255

Leu Leu Leu Met Phe Gly Met Thr Thr Thr Ala Ile Tyr Pro Trp Gly  
 260 265 270

His Ser Phe Ile Leu Ile Leu Gly Asn Ser Lys Leu Lys Gln Ala Ser  
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Arg Val Thr  
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 Ser Val Phe Gly Val Leu Gly Asn Gly Phe Ile Gly Leu Val Asn Cys  
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 Ile Asp Cys Ala Lys Asn Lys Leu Ser Thr Ile Gly Phe Ile Leu Thr  
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 Gly Leu Ala Ile Ser Arg Ile Phe Leu Ile Trp Ile Ile Ile Thr Asp  
 50 55 60  
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 Gly Phe Ile Gln Ile Phe Ser Pro Asn Ile Tyr Ala Ser Gly Asn Leu  
 65 70 75 80  
 att gaa tat att agt tac ttt tgg gta att ggt aat caa tca agt atg 288  
 Ile Glu Tyr Ile Ser Tyr Phe Trp Val Ile Gly Asn Gln Ser Ser Met  
 85 90 95  
 tgg ttt gcc acc agc ctc agc atc ttc tat ttc ctg aag ata gca aat 336  
 Trp Phe Ala Thr Ser Leu Ser Ile Phe Tyr Phe Leu Lys Ile Ala Asn  
 100 105 110  
 ttt tcc aac tac ata ttt ctc tgg ttg aag agc aga aca aat atg gtt 384



Phe	Ser	Asn	Tyr	Ile	Phe	Leu	Trp	Leu	Lys	Ser	Arg	Thr	Asn	Met	Val		
		115					120					125					
ctt	ccc	ttc	atg	ata	gta	ttc	tta	ctt	att	tca	tcg	tta	ctt	aat	ttt		432
Leu	Pro	Phe	Met	Ile	Val	Phe	Leu	Leu	Ile	Ser	Ser	Leu	Leu	Asn	Phe		
	130					135					140						
gca	tac	att	gcg	aag	att	ctt	aat	gat	tat	aaa	atg	aag	aat	gac	aca		480
Ala	Tyr	Ile	Ala	Lys	Ile	Leu	Asn	Asp	Tyr	Lys	Met	Lys	Asn	Asp	Thr		
	145				150					155					160		
gtc	tgg	gat	ctc	aac	atg	tat	aaa	agt	gaa	tac	ttt	att	aca	cag	att		528
Val	Trp	Asp	Leu	Asn	Met	Tyr	Lys	Ser	Glu	Tyr	Phe	Ile	Thr	Gln	Ile		
				165					170					175			
ttg	cta	aat	ctg	gga	gtc	att	ttc	ttc	ttt	aca	cta	tcc	cta	att	aca		576
Leu	Leu	Asn	Leu	Gly	Val	Ile	Phe	Phe	Phe	Thr	Leu	Ser	Leu	Ile	Thr		
			180				185						190				
tgt	att	ttt	tta	atc	att	tcc	ctt	tgg	aga	cac	aac	agg	cag	atg	caa		624
Cys	Ile	Phe	Leu	Ile	Ile	Ser	Leu	Trp	Arg	His	Asn	Arg	Gln	Met	Gln		
		195					200					205					
tcg	aat	gtg	aca	gga	ttg	aga	gac	tcc	aac	aca	gaa	gct	cat	gtg	aag		672
Ser	Asn	Val	Thr	Gly	Leu	Arg	Asp	Ser	Asn	Thr	Glu	Ala	His	Val	Lys		
	210					215					220						
gca	atg	aaa	gtt	ttg	ata	tct	ttc	atc	atc	ctc	ttt	atc	ttg	tat	ttt		720
Ala	Met	Lys	Val	Leu	Ile	Ser	Phe	Ile	Ile	Leu	Phe	Ile	Leu	Tyr	Phe		
	225				230					235					240		
ata	ggc	atg	gcc	ata	gaa	ata	tca	tgt	ttt	act	gtg	cga	gaa	aac	aaa		768
Ile	Gly	Met	Ala	Ile	Glu	Ile	Ser	Cys	Phe	Thr	Val	Arg	Glu	Asn	Lys		
				245					250					255			
ctg	ctg	ctt	atg	ttt	gga	atg	aca	acc	aca	gcc	atc	tat	ccc	tgg	ggt		816
Leu	Leu	Leu	Met	Phe	Gly	Met	Thr	Thr	Thr	Ala	Ile	Tyr	Pro	Trp	Gly		
			260					265					270				
cac	tca	ttt	atc	tta	att	cta	gga	aac	agc	aag	cta	aag	caa	gcc	tct		864
His	Ser	Phe	Ile	Leu	Ile	Leu	Gly	Asn	Ser	Lys	Leu	Lys	Gln	Ala	Ser		
		275					280					285					
ttg	agg	gta	ctg	cag	caa	ttg	aag	tgc	tgt	gag	aaa	agg	aaa	aat	ctc		912
Leu	Arg	Val	Leu	Gln	Gln	Leu	Lys	Cys	Cys	Glu	Lys	Arg	Lys	Asn	Leu		
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aga	gtc	aca	tag														
Arg	Val	Thr															924
			305														

<210> 130  
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<400> 130

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Ser Val Phe Gly Val Leu Gly Asn Gly Phe Ile Gly Leu Val Asn Cys  
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Ile Asp Cys Ala Lys Asn Lys Leu Ser Thr Ile Gly Phe Ile Leu Thr  
                   35                                  40                                  45

Gly Leu Ala Ile Ser Arg Ile Phe Leu Ile Trp Ile Ile Ile Thr Asp  
           50                                  55                                  60

Gly Phe Ile Gln Ile Phe Ser Pro Asn Ile Tyr Ala Ser Gly Asn Leu  
   65                                  70                                  75                                  80

Ile Glu Tyr Ile Ser Tyr Phe Trp Val Ile Gly Asn Gln Ser Ser Met  
                   85                                  90                                  95

Trp Phe Ala Thr Ser Leu Ser Ile Phe Tyr Phe Leu Lys Ile Ala Asn  
                   100                                  105                                  110

Phe Ser Asn Tyr Ile Phe Leu Trp Leu Lys Ser Arg Thr Asn Met Val  
                   115                                  120                                  125

Leu Pro Phe Met Ile Val Phe Leu Leu Ile Ser Ser Leu Leu Asn Phe  
           130                                  135                                  140

Ala Tyr Ile Ala Lys Ile Leu Asn Asp Tyr Lys Met Lys Asn Asp Thr  
   145                                  150                                  155                                  160

Val Trp Asp Leu Asn Met Tyr Lys Ser Glu Tyr Phe Ile Thr Gln Ile  
                   165                                  170                                  175

Leu Leu Asn Leu Gly Val Ile Phe Phe Phe Thr Leu Ser Leu Ile Thr  
                   180                                  185                                  190

Cys Ile Phe Leu Ile Ile Ser Leu Trp Arg His Asn Arg Gln Met Gln  
                   195                                  200                                  205

Ser Asn Val Thr Gly Leu Arg Asp Ser Asn Thr Glu Ala His Val Lys  
           210                                  215                                  220

Ala Met Lys Val Leu Ile Ser Phe Ile Ile Leu Phe Ile Leu Tyr Phe  
   225                                  230                                  235                                  240

Ile Gly Met Ala Ile Glu Ile Ser Cys Phe Thr Val Arg Glu Asn Lys  
                   245                                  250                                  255

Leu Leu Leu Met Phe Gly Met Thr Thr Thr Ala Ile Tyr Pro Trp Gly  
 260 265 270

His Ser Phe Ile Leu Ile Leu Gly Asn Ser Lys Leu Lys Gln Ala Ser  
 275 280 285

Leu Arg Val Leu Gln Gln Leu Lys Cys Cys Glu Lys Arg Lys Asn Leu  
 290 295 300

Arg Val Thr  
 305

<210> 131  
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 Met Leu Arg Val Val Glu Gly Ile Phe Ile Phe Val Val Val Ser Glu  
 1 5 10 15  
 tca gtg ttt ggg gtt ttg ggg aat gga ttt att gga ctt gta aac tgc 96  
 Ser Val Phe Gly Val Leu Gly Asn Gly Phe Ile Gly Leu Val Asn Cys  
 20 25 30  
 att gac tgt gcc aag aat aag tta tct acg att ggc ttt att ctc acc 144  
 Ile Asp Cys Ala Lys Asn Lys Leu Ser Thr Ile Gly Phe Ile Leu Thr  
 35 40 45  
 ggc tta gct att tca aga att ttt ctg ata tgg ata ata att aca gat 192  
 Gly Leu Ala Ile Ser Arg Ile Phe Leu Ile Trp Ile Ile Ile Thr Asp  
 50 55 60  
 gga ttt ata cag ata ttc tct cca aat ata tat gcc tcc ggt aac cta 240  
 Gly Phe Ile Gln Ile Phe Ser Pro Asn Ile Tyr Ala Ser Gly Asn Leu

224/447

65	70	75	80	
att gaa tat att agt tac ttt tgg gta att ggt aat caa tca agt atg Ile Glu Tyr Ile Ser Tyr Phe Trp Val Ile Gly Asn Gln Ser Ser Met 85 90 95				288
tgg ttt gcc acc agc ctc agc atc ttc tat ttc ctg aag ata gca aat Trp Phe Ala Thr Ser Leu Ser Ile Phe Tyr Phe Leu Lys Ile Ala Asn 100 105 110				336
ttt tcc aac tac ata ttt ctc tgg ttg aag agc aga aca aat atg gtt Phe Ser Asn Tyr Ile Phe Leu Trp Leu Lys Ser Arg Thr Asn Met Val 115 120 125				384
ctt ccc ttc atg ata gta ttc tta ctt att tca tct tta ctt aat ttt Leu Pro Phe Met Ile Val Phe Leu Leu Ile Ser Ser Leu Leu Asn Phe 130 135 140				432
gca tac att gcg aag att ctt aat gat tat aaa acg aag aat gac aca Ala Tyr Ile Ala Lys Ile Leu Asn Asp Tyr Lys Thr Lys Asn Asp Thr 145 150 155 160				480
gtc tgg gat ctc aac atg tat aaa agt gaa tac ttt att aaa cag att Val Trp Asp Leu Asn Met Tyr Lys Ser Glu Tyr Phe Ile Lys Gln Ile 165 170 175				528
ttg cta aat ctg gga gtc att ttc ttc ttt aca cta tcc cta att aca Leu Leu Asn Leu Gly Val Ile Phe Phe Phe Thr Leu Ser Leu Ile Thr 180 185 190				576
tgt att ttt tta atc att tcc ctt tgg aga cac aac agg cag atg caa Cys Ile Phe Leu Ile Ile Ser Leu Trp Arg His Asn Arg Gln Met Gln 195 200 205				624
tct aat gtg aca gga ttg aga gac tcc aac aca gaa gct cat gtg aag Ser Asn Val Thr Gly Leu Arg Asp Ser Asn Thr Glu Ala His Val Lys 210 215 220				672
gca atg aaa gtt ttg ata tct ttc atc atc ctc ttt atc ttg tat ttt Ala Met Lys Val Leu Ile Ser Phe Ile Ile Leu Phe Ile Leu Tyr Phe 225 230 235 240				720
ata ggc atg gcc ata gaa ata tca tgt ttt act gtg cga gaa aac aaa Ile Gly Met Ala Ile Glu Ile Ser Cys Phe Thr Val Arg Glu Asn Lys 245 250 255				768
ctg ctg ctt atg ttt gga atg aca acc aca gcc atc tat ccc tgg ggt Leu Leu Leu Met Phe Gly Met Thr Thr Thr Ala Ile Tyr Pro Trp Gly 260 265 270				816
cac tca ttt atc tta att cta gga aac agc aag cta aag caa gcc tct His Ser Phe Ile Leu Ile Leu Gly Asn Ser Lys Leu Lys Gln Ala Ser 275 280 285				864
ttg agg gta ctg cag caa ttg aag tgc tgt gag aaa agg aaa aat ctc Leu Arg Val Leu Gln Gln Leu Lys Cys Cys Glu Lys Arg Lys Asn Leu 290 295 300				912
aga gtc aca tag Arg Val Thr 305				924

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<400> 132

Met Leu Arg Val Val Glu Gly Ile Phe Ile Phe Val Val Val Ser Glu  
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Ser Val Phe Gly Val Leu Gly Asn Gly Phe Ile Gly Leu Val Asn Cys  
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Ile Asp Cys Ala Lys Asn Lys Leu Ser Thr Ile Gly Phe Ile Leu Thr  
 35 40 45

Gly Leu Ala Ile Ser Arg Ile Phe Leu Ile Trp Ile Ile Ile Thr Asp  
 50 55 60

Gly Phe Ile Gln Ile Phe Ser Pro Asn Ile Tyr Ala Ser Gly Asn Leu  
 65 70 75 80

Ile Glu Tyr Ile Ser Tyr Phe Trp Val Ile Gly Asn Gln Ser Ser Met  
 85 90 95

Trp Phe Ala Thr Ser Leu Ser Ile Phe Tyr Phe Leu Lys Ile Ala Asn  
 100 105 110

Phe Ser Asn Tyr Ile Phe Leu Trp Leu Lys Ser Arg Thr Asn Met Val  
 115 120 125

Leu Pro Phe Met Ile Val Phe Leu Leu Ile Ser Ser Leu Leu Asn Phe  
 130 135 140

Ala Tyr Ile Ala Lys Ile Leu Asn Asp Tyr Lys Thr Lys Asn Asp Thr  
 145 150 155 160

Val Trp Asp Leu Asn Met Tyr Lys Ser Glu Tyr Phe Ile Lys Gln Ile  
 165 170 175

Leu Leu Asn Leu Gly Val Ile Phe Phe Phe Thr Leu Ser Leu Ile Thr  
 180 185 190

Cys Ile Phe Leu Ile Ile Ser Leu Trp Arg His Asn Arg Gln Met Gln  
 195 200 205

Ser Asn Val Thr Gly Leu Arg Asp Ser Asn Thr Glu Ala His Val Lys  
 210 215 220

Ala Met Lys Val Leu Ile Ser Phe Ile Ile Leu Phe Ile Leu Tyr Phe  
 225 230 235 240

Ile Gly Met Ala Ile Glu Ile Ser Cys Phe Thr Val Arg Glu Asn Lys  
 245 250 255

Leu Leu Leu Met Phe Gly Met Thr Thr Thr Ala Ile Tyr Pro Trp Gly  
 260 265 270

His Ser Phe Ile Leu Ile Leu Gly Asn Ser Lys Leu Lys Gln Ala Ser  
 275 280 285

Leu Arg Val Leu Gln Gln Leu Lys Cys Cys Glu Lys Arg Lys Asn Leu  
 290 295 300

Arg Val Thr  
 305

<210> 133  
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 <212> DNA  
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 ttc ata att ggg aat ttg agc aat gga ttt ata gta ctg atc aac tgc 96  
 Phe Ile Ile Gly Asn Leu Ser Asn Gly Phe Ile Val Leu Ile Asn Cys  
 20 25 30  
 att gac tgg gtc agt aaa aga gag ctg tcc tca gtc gat aaa ctc ctc 144  
 Ile Asp Trp Val Ser Lys Arg Glu Leu Ser Ser Val Asp Lys Leu Leu  
 35 40 45  
 att atc ttg gca atc tcc aga att ggg ctg atc tgg gaa ata tta gta 192  
 Ile Ile Leu Ala Ile Ser Arg Ile Gly Leu Ile Trp Glu Ile Leu Val  
 50 55 60  
 agt tgg ttt tta gct ctg cat tat cta gcc ata ttt gtg tct gga aca 240

<210> 134

<211> 303  
<212> PRT  
<213> homo sapiens

<400> 134

Met Glu Ser Ala Leu Pro Ser Ile Phe Thr Leu Val Ile Ile Ala Glu  
1 5 10 15

Phe Ile Ile Gly Asn Leu Ser Asn Gly Phe Ile Val Leu Ile Asn Cys  
20 25 30

Ile Asp Trp Val Ser Lys Arg Glu Leu Ser Ser Val Asp Lys Leu Leu  
35 40 45

Ile Ile Leu Ala Ile Ser Arg Ile Gly Leu Ile Trp Glu Ile Leu Val  
50 55 60

Ser Trp Phe Leu Ala Leu His Tyr Leu Ala Ile Phe Val Ser Gly Thr  
65 70 75 80

Gly Leu Arg Ile Met Ile Phe Ser Trp Ile Val Ser Asn His Phe Asn  
85 90 95

Leu Trp Leu Ala Thr Ile Phe Ser Ile Phe Tyr Leu Leu Lys Ile Ala  
100 105 110

Ser Phe Ser Ser Pro Ala Phe Leu Tyr Leu Lys Trp Arg Val Asn Lys  
115 120 125

Val Ile Leu Met Ile Leu Leu Gly Thr Leu Val Phe Leu Phe Leu Asn  
130 135 140

Leu Ile Gln Ile Asn Met His Ile Lys Asp Trp Leu Asp Arg Tyr Glu  
145 150 155 160

Arg Asn Thr Thr Trp Asn Phe Ser Met Ser Asp Phe Glu Thr Phe Ser  
165 170 175

Val Ser Val Lys Phe Thr Met Thr Met Phe Ser Leu Thr Pro Phe Thr  
180 185 190

Val Ala Phe Ile Ser Phe Leu Leu Leu Ile Phe Ser Leu Gln Lys His  
195 200 205

Leu Gln Lys Met Gln Leu Asn Tyr Lys Gly His Arg Asp Pro Arg Thr  
210 215 220



Lys Val His Thr Asn Ala Leu Lys Ile Val Ile Ser Phe Leu Leu Phe  
 225 230 235 240

Tyr Ala Ser Phe Phe Leu Cys Val Leu Ile Ser Trp Ile Ser Glu Leu  
 245 250 255

Tyr Gln Asn Thr Val Ile Tyr Met Leu Cys Glu Thr Ile Gly Val Phe  
 260 265 270

Ser Pro Ser Ser His Ser Phe Leu Leu Ile Leu Gly Asn Ala Lys Leu  
 275 280 285

Arg Gln Ala Phe Leu Leu Val Ala Ala Lys Val Trp Ala Lys Arg  
 290 295 300

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 <222> (1)..(912)

<220>  
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 <223> SNP

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ttc ata att ggg aat ttg agc aat gga ttt ata gta ctg atc aac tgc 96  
 Phe Ile Ile Gly Asn Leu Ser Asn Gly Phe Ile Val Leu Ile Asn Cys  
 20 25 30

att gac tgg gtc agt aaa aga gag ctg tcc tca gtc gat aaa ctc ctc 144  
 Ile Asp Trp Val Ser Lys Arg Glu Leu Ser Ser Val Asp Lys Leu Leu  
 35 40 45

att atc ttg gca atc tcc aga att ggg ctg atc tgg gaa ata tta gta 192  
 Ile Ile Leu Ala Ile Ser Arg Ile Gly Leu Ile Trp Glu Ile Leu Val  
 50 55 60

agt tgg ttt tta gct ctg cat tat cta gcc ata ttt gtg tct gga aca 240  
 Ser Trp Phe Leu Ala Leu His Tyr Leu Ala Ile Phe Val Ser Gly Thr  
 65 70 75 80

gga tta aga att atg att ttt agc tgg ata gtt tct aat cac ttc aat 288  
 Gly Leu Arg Ile Met Ile Phe Ser Trp Ile Val Ser Asn His Phe Asn  
 85 90 95

ctc tgg ctt gct aca atc ttc agc atc ttt tat ttg ctc aaa ata gcg Leu Trp Leu Ala Thr Ile Phe Ser Ile Phe Tyr Leu Leu Lys Ile Ala 100 105 110	336
agt ttc tct agc cct gct ttt ctc tat ttg aag tgg aga gta aac aaa Ser Phe Ser Ser Pro Ala Phe Leu Tyr Leu Lys Trp Arg Val Asn Lys 115 120 125	384
gtg att ctg atg ata ctg cta gga acc ttg gtc ttc tta ttt tta aat Val Ile Leu Met Ile Leu Leu Gly Thr Leu Val Phe Leu Phe Leu Asn 130 135 140	432
ctg ata caa ata aac atg cat ata aaa gac tgg ctg gac cga tat gaa Leu Ile Gln Ile Asn Met His Ile Lys Asp Trp Leu Asp Arg Tyr Glu 145 150 155 160	480
aga aac aca act tgg aat ttc agt atg agt gac ttt gaa aca ttt tca Arg Asn Thr Thr Trp Asn Phe Ser Met Ser Asp Phe Glu Thr Phe Ser 165 170 175	528
gtg tcg gtc aaa ttc act atg act atg ttc agt cta aca cca ttt act Val Ser Val Lys Phe Thr Met Thr Met Phe Ser Leu Thr Pro Phe Thr 180 185 190	576
gtg gcc ttc atc tct ttt ctc ctg tta att ttc tcc ctg cag aaa cat Val Ala Phe Ile Ser Phe Leu Leu Leu Ile Phe Ser Leu Gln Lys His 195 200 205	624
ctc cag aaa atg caa ctc aat tac aaa gga cac aga gac ccc agg acc Leu Gln Lys Met Gln Leu Asn Tyr Lys Gly His Arg Asp Pro Arg Thr 210 215 220	672
aag gtc cat aca aat gcc ttg aaa att gtg atc tca ttc ctt tta ttc Lys Val His Thr Asn Ala Leu Lys Ile Val Ile Ser Phe Leu Leu Phe 225 230 235 240	720
tat gct agt ttc ttt cta tgt gtt ctc ata tca tgg att tct gag ctg Tyr Ala Ser Phe Phe Leu Cys Val Leu Ile Ser Trp Ile Ser Glu Leu 245 250 255	768
tat cag agc aca gtg atc tac atg ctt tgt gag acg att gga gtc ttc Tyr Gln Ser Thr Val Ile Tyr Met Leu Cys Glu Thr Ile Gly Val Phe 260 265 270	816
tct cct tca agc cac tcc ttt ctt ctg att cta gga aac gct aag tta Ser Pro Ser Ser His Ser Phe Leu Leu Ile Leu Gly Asn Ala Lys Leu 275 280 285	864
aga cag gcc ttt ctt ttg gtg gca gct aag gta tgg gct aaa cga tga Arg Gln Ala Phe Leu Leu Val Ala Ala Lys Val Trp Ala Lys Arg 290 295 300	912

&lt;210&gt; 136

&lt;211&gt; 303

&lt;212&gt; PRT

&lt;213&gt; homo sapiens

&lt;400&gt; 136

Met Glu Ser Ala Leu Pro Ser Ile Phe Thr Leu Val Ile Ile Ala Glu

Tyr Ala Ser Phe Phe Leu Cys Val Leu Ile Ser Trp Ile Ser Glu Leu  
245 250 255

Tyr Gln Ser Thr Val Ile Tyr Met Leu Cys Glu Thr Ile Gly Val Phe  
 260 265 270

Ser Pro Ser Ser His Ser Phe Leu Leu Ile Leu Gly Asn Ala Lys Leu  
 275 280 285

Arg Gln Ala Phe Leu Leu Val Ala Ala Lys Val Trp Ala Lys Arg  
 290 295 300

<210> 137  
 <211> 954  
 <212> DNA  
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 <222> (1)..(954)

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 1 5 10 15  
 ttt ata att gga aat tta gga aat agt ttc ata gca ctg gtg aac tgt 96  
 Phe Ile Ile Gly Asn Leu Gly Asn Ser Phe Ile Ala Leu Val Asn Cys  
 20 25 30  
 att gac tgg gtc aag gga aga aag atc tct tcg gtt gat cgg atc ctc 144  
 Ile Asp Trp Val Lys Gly Arg Lys Ile Ser Ser Val Asp Arg Ile Leu  
 35 40 45  
 act gct ttg gca atc tct cga att agc ctg gtt tgg tta ata ttc gga 192  
 Thr Ala Leu Ala Ile Ser Arg Ile Ser Leu Val Trp Leu Ile Phe Gly  
 50 55 60  
 agc tgg tgt gtg tct gtg ttt ttc cca gct tta ttt gcc act gaa aaa 240  
 Ser Trp Cys Val Ser Val Phe Phe Pro Ala Leu Phe Ala Thr Glu Lys  
 65 70 75 80  
 atg ttc aga atg ctt act aat atc tgg aca gtg atc aat cat ttt agt 288  
 Met Phe Arg Met Leu Thr Asn Ile Trp Thr Val Ile Asn His Phe Ser  
 85 90 95  
 gtc tgg tta gct aca ggc ctc ggt act ttt tat ttt ctc aag ata gcc 336  
 Val Trp Leu Ala Thr Gly Leu Gly Thr Phe Tyr Phe Leu Lys Ile Ala

100	105	110	
aat ttt tct aac tct att ttt ctc tac cta aag tgg agg gtt aaa aag Asn Phe Ser Asn Ser Ile Phe Leu Tyr Leu Lys Trp Arg Val Lys Lys 115 120 125			384
gtg gtt ttg gtg ctg ctt ctt gtg act tcg gtc ttc ttg ttt tta aat Val Val Leu Val Leu Leu Leu Val Thr Ser Val Phe Leu Phe Leu Asn 130 135 140			432
att gca ctg ata aac atc cat ata aat gcc agt atc aat gga tac aga Ile Ala Leu Ile Asn Ile His Ile Asn Ala Ser Ile Asn Gly Tyr Arg 145 150 155 160			480
aga aac aag act tgc agt tct gat tca agt aac ttt aca cga ttt tcc Arg Asn Lys Thr Cys Ser Ser Asp Ser Ser Asn Phe Thr Arg Phe Ser 165 170 175			528
agt ctt att gta tta acc agc act gtg ttc att ttc ata ccc ttt act Ser Leu Ile Val Leu Thr Ser Thr Val Phe Ile Phe Ile Pro Phe Thr 180 185 190			576
ttg tcc ctg gca atg ttt ctt ctc ctc atc ttc tcc atg tgg aaa cat Leu Ser Leu Ala Met Phe Leu Leu Leu Ile Phe Ser Met Trp Lys His 195 200 205			624
cgc aag aag atg cag cac act gtc aaa ata tcc gga gac gcc agc acc Arg Lys Lys Met Gln His Thr Val Lys Ile Ser Gly Asp Ala Ser Thr 210 215 220			672
aaa gcc cac aga gga gtt aaa agt gtg atc act ttc ttc cta ctc tat Lys Ala His Arg Gly Val Lys Ser Val Ile Thr Phe Phe Leu Leu Tyr 225 230 235 240			720
gcc att ttc tct ctg tct ttt ttc ata tca gtt tgg acc tct gaa agg Ala Ile Phe Ser Leu Ser Phe Phe Ile Ser Val Trp Thr Ser Glu Arg 245 250 255			768
ttg gag gaa aat cta att att ctt tcc cag gtg atg gga atg gct tat Leu Glu Glu Asn Leu Ile Ile Leu Ser Gln Val Met Gly Met Ala Tyr 260 265 270			816
cct tca tgt cac tca tgt gtt ctg att ctt gga aac aag aag ctg aga Pro Ser Cys His Ser Cys Val Leu Ile Leu Gly Asn Lys Lys Leu Arg 275 280 285			864
cag gcc tct ctg tca gtg cta ctg tgg ctg agg tac atg ttc aaa gat Gln Ala Ser Leu Ser Val Leu Leu Trp Leu Arg Tyr Met Phe Lys Asp 290 295 300			912
ggg gag ccc tca ggt cac aaa gaa ttt aga gaa tca tct tga Gly Glu Pro Ser Gly His Lys Glu Phe Arg Glu Ser Ser 305 310 315			954

<210> 138  
 <211> 317  
 <212> PRT  
 <213> homo sapiens

<400> 138

Met Gly Gly Val Ile Lys Ser Ile Phe Thr Phe Val Leu Ile Val Glu  
 1 5 10 15  
 Phe Ile Ile Gly Asn Leu Gly Asn Ser Phe Ile Ala Leu Val Asn Cys  
 20 25 30  
 Ile Asp Trp Val Lys Gly Arg Lys Ile Ser Ser Val Asp Arg Ile Leu  
 35 40 45  
 Thr Ala Leu Ala Ile Ser Arg Ile Ser Leu Val Trp Leu Ile Phe Gly  
 50 55 60  
 Ser Trp Cys Val Ser Val Phe Phe Pro Ala Leu Phe Ala Thr Glu Lys  
 65 70 75 80  
 Met Phe Arg Met Leu Thr Asn Ile Trp Thr Val Ile Asn His Phe Ser  
 85 90 95  
 Val Trp Leu Ala Thr Gly Leu Gly Thr Phe Tyr Phe Leu Lys Ile Ala  
 100 105 110  
 Asn Phe Ser Asn Ser Ile Phe Leu Tyr Leu Lys Trp Arg Val Lys Lys  
 115 120 125  
 Val Val Leu Val Leu Leu Leu Val Thr Ser Val Phe Leu Phe Leu Asn  
 130 135 140  
 Ile Ala Leu Ile Asn Ile His Ile Asn Ala Ser Ile Asn Gly Tyr Arg  
 145 150 155 160  
 Arg Asn Lys Thr Cys Ser Ser Asp Ser Ser Asn Phe Thr Arg Phe Ser  
 165 170 175  
 Ser Leu Ile Val Leu Thr Ser Thr Val Phe Ile Phe Ile Pro Phe Thr  
 180 185 190  
 Leu Ser Leu Ala Met Phe Leu Leu Leu Ile Phe Ser Met Trp Lys His  
 195 200 205  
 Arg Lys Lys Met Gln His Thr Val Lys Ile Ser Gly Asp Ala Ser Thr  
 210 215 220  
 Lys Ala His Arg Gly Val Lys Ser Val Ile Thr Phe Phe Leu Leu Tyr  
 225 230 235 240

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Ala Ile Phe Ser Leu Ser Phe Phe Ile Ser Val Trp Thr Ser Glu Arg  
 245 250 255

Leu Glu Glu Asn Leu Ile Ile Leu Ser Gln Val Met Gly Met Ala Tyr  
 260 265 270

Pro Ser Cys His Ser Cys Val Leu Ile Leu Gly Asn Lys Lys Leu Arg  
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Gln Ala Ser Leu Ser Val Leu Leu Trp Leu Arg Tyr Met Phe Lys Asp  
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Gly Glu Pro Ser Gly His Lys Glu Phe Arg Glu Ser Ser  
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 1 5 10 15  
 ttt ata att gga aat tta gga aat agt ttc ata gca ctg gtg aac tgt 96  
 Phe Ile Ile Gly Asn Leu Gly Asn Ser Phe Ile Ala Leu Val Asn Cys  
 20 25 30  
 att gac tgg gtc aag gga aga aag atc tct tcg gtt gat cgg atc ctc 144  
 Ile Asp Trp Val Lys Gly Arg Lys Ile Ser Ser Val Asp Arg Ile Leu  
 35 40 45  
 act gct ttg gca atc tct cga att agc ctg gtt tgg tta ata ttc gga 192  
 Thr Ala Leu Ala Ile Ser Arg Ile Ser Leu Val Trp Leu Ile Phe Gly  
 50 55 60  
 agc tgg tgt gtg tct gtg ttt ttc cca gct tta ttt gcc act gaa aaa 240  
 Ser Trp Cys Val Ser Val Phe Phe Pro Ala Leu Phe Ala Thr Glu Lys  
 65 70 75 80

atg ttc aga atg ctt act aat atc tgg aca gtg atc aat cat ttt agt Met Phe Arg Met Leu Thr Asn Ile Trp Thr Val Ile Asn His Phe Ser 85 90 95	288
gtc tgg tta gct aca ggc ctc ggt act ttt tat ttt ctc aag ata gcc Val Trp Leu Ala Thr Gly Leu Gly Thr Phe Tyr Phe Leu Lys Ile Ala 100 105 110	336
aat ttt tct aac tct att ttt ctc tac cta aag tgg agg gtt aaa aag Asn Phe Ser Asn Ser Ile Phe Leu Tyr Leu Lys Trp Arg Val Lys Lys 115 120 125	384
gtg gtt ttg gtg ctg ctt ctt gtg act tcg gtc ttc ttg ttt tta aat Val Val Leu Val Leu Leu Leu Val Thr Ser Val Phe Leu Phe Leu Asn 130 135 140	432
att gca ctg ata aac atc cat ata aat gcc agt atc aat gga tac aga Ile Ala Leu Ile Asn Ile His Ile Asn Ala Ser Ile Asn Gly Tyr Arg 145 150 155 160	480
aga aac aag act tgc agt tct gat tca agt aac ttt aca cga ttt tcc Arg Asn Lys Thr Cys Ser Ser Asp Ser Ser Asn Phe Thr Arg Phe Ser 165 170 175	528
agt ctt att gta tta acc agc act gtg ttc att ttc ata ccc ttt act Ser Leu Ile Val Leu Thr Ser Thr Val Phe Ile Phe Ile Pro Phe Thr 180 185 190	576
ttg tcc ctg gca gtg ttt ctt ctc ctc atc ttc tcc atg tgg aaa cat Leu Ser Leu Ala Val Phe Leu Leu Leu Ile Phe Ser Met Trp Lys His 195 200 205	624
cgc aag aag atg cag cac act gtc aaa ata tcc gga gac gcc agc acc Arg Lys Lys Met Gln His Thr Val Lys Ile Ser Gly Asp Ala Ser Thr 210 215 220	672
aaa gcc cac aga gga gtt aaa agt gtg atc act ttc ttc cta ctc tat Lys Ala His Arg Gly Val Lys Ser Val Ile Thr Phe Phe Leu Leu Tyr 225 230 235 240	720
gcc att ttc tct ctg tct ttt ttc ata tca gtt tgg acc tct gaa agg Ala Ile Phe Ser Leu Ser Phe Phe Ile Ser Val Trp Thr Ser Glu Arg 245 250 255	768
ttg gag gaa aat cta att att ctt tcc cag gtg atg gga atg gct tat Leu Glu Glu Asn Leu Ile Ile Leu Ser Gln Val Met Gly Met Ala Tyr 260 265 270	816
cct tca tgt cac tca tgt gtt ctg att ctt gga aac aag aag ctg aga Pro Ser Cys His Ser Cys Val Leu Ile Leu Gly Asn Lys Lys Leu Arg 275 280 285	864
cag gcc tct ctg tca gtg cta ctg tgg ctg agg tac atg ttc aaa gat Gln Ala Ser Leu Ser Val Leu Leu Trp Leu Arg Tyr Met Phe Lys Asp 290 295 300	912
ggg gag ccc tca ggt cac aaa gaa ttt aga gaa tca tct tga Gly Glu Pro Ser Gly His Lys Glu Phe Arg Glu Ser Ser 305 310 315	954



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Phe Ile Ile Gly Asn Leu Gly Asn Ser Phe Ile Ala Leu Val Asn Cys  
 20 25 30

Ile Asp Trp Val Lys Gly Arg Lys Ile Ser Ser Val Asp Arg Ile Leu  
 35 40 45

Thr Ala Leu Ala Ile Ser Arg Ile Ser Leu Val Trp Leu Ile Phe Gly  
 50 55 60

Ser Trp Cys Val Ser Val Phe Phe Pro Ala Leu Phe Ala Thr Glu Lys  
 65 70 75 80

Met Phe Arg Met Leu Thr Asn Ile Trp Thr Val Ile Asn His Phe Ser  
 85 90 95

Val Trp Leu Ala Thr Gly Leu Gly Thr Phe Tyr Phe Leu Lys Ile Ala  
 100 105 110

Asn Phe Ser Asn Ser Ile Phe Leu Tyr Leu Lys Trp Arg Val Lys Lys  
 115 120 125

Val Val Leu Val Leu Leu Leu Val Thr Ser Val Phe Leu Phe Leu Asn  
 130 135 140

Ile Ala Leu Ile Asn Ile His Ile Asn Ala Ser Ile Asn Gly Tyr Arg  
 145 150 155 160

Arg Asn Lys Thr Cys Ser Ser Asp Ser Ser Asn Phe Thr Arg Phe Ser  
 165 170 175

Ser Leu Ile Val Leu Thr Ser Thr Val Phe Ile Phe Ile Pro Phe Thr  
 180 185 190

Leu Ser Leu Ala Val Phe Leu Leu Leu Ile Phe Ser Met Trp Lys His  
 195 200 205

Arg Lys Lys Met Gln His Thr Val Lys Ile Ser Gly Asp Ala Ser Thr  
 210 215 220

Lys Ala His Arg Gly Val Lys Ser Val Ile Thr Phe Phe Leu Leu Tyr  
 225 230 235 240

Ala Ile Phe Ser Leu Ser Phe Phe Ile Ser Val Trp Thr Ser Glu Arg  
 245 250 255

Leu Glu Glu Asn Leu Ile Ile Leu Ser Gln Val Met Gly Met Ala Tyr  
 260 265 270

Pro Ser Cys His Ser Cys Val Leu Ile Leu Gly Asn Lys Lys Leu Arg  
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Gln Ala Ser Leu Ser Val Leu Leu Trp Leu Arg Tyr Met Phe Lys Asp  
 290 295 300

Gly Glu Pro Ser Gly His Lys Glu Phe Arg Glu Ser Ser  
 305 310 315

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 1 5 10 15  
 ttt ata att gga aat tta gga aat agt ttc ata gca ctg gtg aac tgt 96  
 Phe Ile Ile Gly Asn Leu Gly Asn Ser Phe Ile Ala Leu Val Asn Cys  
 20 25 30  
 att gac tgg gtc aag gga aga aag atc tct tgc gtt gat cgg atc ctc 144  
 Ile Asp Trp Val Lys Gly Arg Lys Ile Ser Ser Val Asp Arg Ile Leu  
 35 40 45  
 act gct ttg gca atc tct cga att agc ctg gtt tgg tta ata ttc gga 192  
 Thr Ala Leu Ala Ile Ser Arg Ile Ser Leu Val Trp Leu Ile Phe Gly

50	55	60	
agc tgg tgt gtg tct gtg ttt ttc cca gct tta ttt gcc act gaa aaa Ser Trp Cys Val Ser Val Phe Phe Pro Ala Leu Phe Ala Thr Glu Lys 65 70 75 80			240
atg ttc aga atg ctt gct aat atc tgg aca gtg atc aat cat ttt agt Met Phe Arg Met Leu Ala Asn Ile Trp Thr Val Ile Asn His Phe Ser 85 90 95			288
gtc tgg tta gct aca ggc ctc ggt act ttt tat ttt ctc aag ata gcc Val Trp Leu Ala Thr Gly Leu Gly Thr Phe Tyr Phe Leu Lys Ile Ala 100 105 110			336
aat ttt tct aac tct att ttt ctc tac cta aag tgg agg gtt aaa aag Asn Phe Ser Asn Ser Ile Phe Leu Tyr Leu Lys Trp Arg Val Lys Lys 115 120 125			384
gtg gtt ttg gtg ctg ctt ctt gtg act tcg gtc ttc ttg ttt tta aat Val Val Leu Val Leu Leu Leu Val Thr Ser Val Phe Leu Phe Leu Asn 130 135 140			432
att gca ctg ata aac atc cat ata aat gcc agt atc aat gga tac aga Ile Ala Leu Ile Asn Ile His Ile Asn Ala Ser Ile Asn Gly Tyr Arg 145 150 155 160			480
aga aac aag act tgc agt tct gat tca agt aac ttt aca cga ttt tcc Arg Asn Lys Thr Cys Ser Ser Asp Ser Ser Asn Phe Thr Arg Phe Ser 165 170 175			528
agt ctt att gta tta acc agc act gtg ttc att ttc ata ccc ttt act Ser Leu Ile Val Leu Thr Ser Thr Val Phe Ile Phe Ile Pro Phe Thr 180 185 190			576
ttg tcc ctg gca atg ttt ctt ctc ctc atc ttc tcc atg tgg aaa cat Leu Ser Leu Ala Met Phe Leu Leu Leu Ile Phe Ser Met Trp Lys His 195 200 205			624
cgc aag aag atg cag cac act gtc aaa ata tcc gga gac gcc agc acc Arg Lys Lys Met Gln His Thr Val Lys Ile Ser Gly Asp Ala Ser Thr 210 215 220			672
aaa gcc cac aga gga gtt aaa agt gtg atc act ttc ttc cta ctc tat Lys Ala His Arg Gly Val Lys Ser Val Ile Thr Phe Phe Leu Leu Tyr 225 230 235 240			720
gcc att ttc tct ctg tct ttt ttc ata tca gtt tgg acc tct gaa agg Ala Ile Phe Ser Leu Ser Phe Phe Ile Ser Val Trp Thr Ser Glu Arg 245 250 255			768
ttg gag gaa aat cta att att ctt tcc cag gtg atg gga atg gct tat Leu Glu Glu Asn Leu Ile Ile Leu Ser Gln Val Met Gly Met Ala Tyr 260 265 270			816
cct tca tgt cac tca tgt gtt ctg att ctt gga aac aag aag ctg aga Pro Ser Cys His Ser Cys Val Leu Ile Leu Gly Asn Lys Lys Leu Arg 275 280 285			864
cag gcc tct ctg tca gtg cta ctg tgg ctg agg tac atg ttc aaa gat Gln Ala Ser Leu Ser Val Leu Leu Trp Leu Arg Tyr Met Phe Lys Asp 290 295 300			912

ggg gag ccc tca ggt cac aaa gaa ttt aga gaa tca tct tga  
 Gly Glu Pro Ser Gly His Lys Glu Phe Arg Glu Ser Ser  
 305 310 315

954

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Phe Ile Ile Gly Asn Leu Gly Asn Ser Phe Ile Ala Leu Val Asn Cys  
 20 25 30

Ile Asp Trp Val Lys Gly Arg Lys Ile Ser Ser Val Asp Arg Ile Leu  
 35 40 45

Thr Ala Leu Ala Ile Ser Arg Ile Ser Leu Val Trp Leu Ile Phe Gly  
 50 55 60

Ser Trp Cys Val Ser Val Phe Phe Pro Ala Leu Phe Ala Thr Glu Lys  
 65 70 75 80

Met Phe Arg Met Leu Ala Asn Ile Trp Thr Val Ile Asn His Phe Ser  
 85 90 95

Val Trp Leu Ala Thr Gly Leu Gly Thr Phe Tyr Phe Leu Lys Ile Ala  
 100 105 110

Asn Phe Ser Asn Ser Ile Phe Leu Tyr Leu Lys Trp Arg Val Lys Lys  
 115 120 125

Val Val Leu Val Leu Leu Leu Val Thr Ser Val Phe Leu Phe Leu Asn  
 130 135 140

Ile Ala Leu Ile Asn Ile His Ile Asn Ala Ser Ile Asn Gly Tyr Arg  
 145 150 155 160

Arg Asn Lys Thr Cys Ser Ser Asp Ser Ser Asn Phe Thr Arg Phe Ser  
 165 170 175

Ser Leu Ile Val Leu Thr Ser Thr Val Phe Ile Phe Ile Pro Phe Thr  
 180 185 190

Leu Ser Leu Ala Met Phe Leu Leu Leu Ile Phe Ser Met Trp Lys His  
 195 200 205

Arg Lys Lys Met Gln His Thr Val Lys Ile Ser Gly Asp Ala Ser Thr  
 210 215 220

Lys Ala His Arg Gly Val Lys Ser Val Ile Thr Phe Phe Leu Leu Tyr  
 225 230 235 240

Ala Ile Phe Ser Leu Ser Phe Phe Ile Ser Val Trp Thr Ser Glu Arg  
 245 250 255

Leu Glu Glu Asn Leu Ile Ile Leu Ser Gln Val Met Gly Met Ala Tyr  
 260 265 270

Pro Ser Cys His Ser Cys Val Leu Ile Leu Gly Asn Lys Lys Leu Arg  
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Gln Ala Ser Leu Ser Val Leu Leu Trp Leu Arg Tyr Met Phe Lys Asp  
 290 295 300

Gly Glu Pro Ser Gly His Lys Glu Phe Arg Glu Ser Ser  
 305 310 315

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1 5 10 15	
gag tcc ttg aca att att gtg cag agc agc cta att gtt gca gtg ctg	96
Glu Ser Leu Thr Ile Ile Val Gln Ser Ser Leu Ile Val Ala Val Leu	
20 25 30	
ggc aga gaa tgg ctg caa gtc aga agg ctg atg cct gtg gac atg att	144
Gly Arg Glu Trp Leu Gln Val Arg Arg Leu Met Pro Val Asp Met Ile	
35 40 45	
ctc atc agc ctg ggc atc tct cgc ttc tgt cta cag tgg gca tca atg	192
Leu Ile Ser Leu Gly Ile Ser Arg Phe Cys Leu Gln Trp Ala Ser Met	
50 55 60	
ctg aac aat ttt tgc tcc tat ttt aat ttg aat tat gta ctt tgc aac	240
Leu Asn Asn Phe Cys Ser Tyr Phe Asn Leu Asn Tyr Val Leu Cys Asn	
65 70 75 80	
tta aca atc acc tgg gaa ttt ttt aat atc ctt aca ttc tgg tta aac	288
Leu Thr Ile Thr Trp Glu Phe Phe Asn Ile Leu Thr Phe Trp Leu Asn	
85 90 95	
agc ttg ctt acc gtg ttc tac tgc atc aag gtc tct tct ttc acc cat	336
Ser Leu Leu Thr Val Phe Tyr Cys Ile Lys Val Ser Ser Phe Thr His	
100 105 110	
cac atc ttt ctc tgg ctg agg tgg aga att ttg agg ttg ttt ccc tgg	384
His Ile Phe Leu Trp Leu Arg Trp Arg Ile Leu Arg Leu Phe Pro Trp	
115 120 125	
ata tta ctg ggt tct ctg atg att act tgt gta aca atc atc cct tca	432
Ile Leu Leu Gly Ser Leu Met Ile Thr Cys Val Thr Ile Ile Pro Ser	
130 135 140	
gct att ggg aat tac att caa att cag tta ctc acc atg gag cat cta	480
Ala Ile Gly Asn Tyr Ile Gln Ile Gln Leu Leu Thr Met Glu His Leu	
145 150 155 160	
cca aga aac agc act gta act gac aaa ctt gaa aat ttt cat cag tat	528
Pro Arg Asn Ser Thr Val Thr Asp Lys Leu Glu Asn Phe His Gln Tyr	
165 170 175	
cag ttc cag gct cat aca gtt gca ttg gtt att cct ttc atc ctg ttc	576
Gln Phe Gln Ala His Thr Val Ala Leu Val Ile Pro Phe Ile Leu Phe	
180 185 190	
ctg gcc tcc acc atc ttt ctc atg gca tca ctg acc aag cag ata caa	624
Leu Ala Ser Thr Ile Phe Leu Met Ala Ser Leu Thr Lys Gln Ile Gln	
195 200 205	
cat cat agc act ggt cac tgc aat cca agc atg aaa gcg cac ttc act	672
His His Ser Thr Gly His Cys Asn Pro Ser Met Lys Ala His Phe Thr	
210 215 220	
gcc ctg agg tcc ctt gcc gtc tta ttt att gtg ttt acc tct tac ttt	720
Ala Leu Arg Ser Leu Ala Val Leu Phe Ile Val Phe Thr Ser Tyr Phe	
225 230 235 240	

cta acc ata ctc atc acc att ata ggt act cta ttt gat aag aga tgt 768  
Leu Thr Ile Leu Ile Thr Ile Ile Gly Thr Leu Phe Asp Lys Arg Cys  
245 250 255

tgg tta tgg gtc tgg gaa gct ttt gtc tat gct ttc atc tta atg cat 816  
 Trp Leu Trp Val Trp Glu Ala Phe Val Tyr Ala Phe Ile Leu Met His  
 260 265 270

tcc act tca ctg atg ctg agc agc cct acg ttg aaa agg att cta aag  
Ser Thr Ser Leu Met Leu Ser Ser Pro Thr Leu Lys Arg Ile Leu Lys 864  
275 280 285

gga aag tgc tag  
Gly Lys Cys 876  
290

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<210> 144
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<212> PRT
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Glu Ser Leu Thr Ile Ile Val Gln Ser Ser Leu Ile Val Ala Val Leu  
20 25 30

Gly Arg Glu Trp Leu Gln Val Arg Arg Leu Met Pro Val Asp Met Ile  
35 40 45

Leu Ile Ser Leu Gly Ile Ser Arg Phe Cys Leu Gln Trp Ala Ser Met  
50 55 60

Leu Asn Asn Phe Cys Ser Tyr Phe Asn Leu Asn Tyr Val Leu Cys Asn  
65 70 75 80

Leu Thr Ile Thr Trp Glu Phe Phe Asn Ile Leu Thr Phe Trp Leu Asn  
85 90 95

Ser Leu Leu Thr Val Phe Tyr Cys Ile Lys Val Ser Ser Phe Thr His  
100 105 110

His Ile Phe Leu Trp Leu Arg Trp Arg Ile Leu Arg Leu Phe Pro Trp  
115 120 125

Ile Leu Leu Gly Ser Leu Met Ile Thr Cys Val Thr Ile Ile Pro Ser  
130 135 140

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Ala Ile Gly Asn Tyr Ile Gln Ile Gln Leu Leu Thr Met Glu His Leu  
 145 150 155 160

Pro Arg Asn Ser Thr Val Thr Asp Lys Leu Glu Asn Phe His Gln Tyr  
 165 170 175

Gln Phe Gln Ala His Thr Val Ala Leu Val Ile Pro Phe Ile Leu Phe  
 180 185 190

Leu Ala Ser Thr Ile Phe Leu Met Ala Ser Leu Thr Lys Gln Ile Gln  
 195 200 205

His His Ser Thr Gly His Cys Asn Pro Ser Met Lys Ala His Phe Thr  
 210 215 220

Ala Leu Arg Ser Leu Ala Val Leu Phe Ile Val Phe Thr Ser Tyr Phe  
 225 230 235 240

Leu Thr Ile Leu Ile Thr Ile Ile Gly Thr Leu Phe Asp Lys Arg Cys  
 245 250 255

Trp Leu Trp Val Trp Glu Ala Phe Val Tyr Ala Phe Ile Leu Met His  
 260 265 270

Ser Thr Ser Leu Met Leu Ser Ser Pro Thr Leu Lys Arg Ile Leu Lys  
 275 280 285

Gly Lys Cys  
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1 5 10 15	
gag tcc ttg aca att att gtg cag agc agc cta att gtt gca gtg ctg	96
Glu Ser Leu Thr Ile Ile Val Gln Ser Ser Leu Ile Val Ala Val Leu	
20 25 30	
ggc aga gaa tgg ctg caa gtc aga agg ctg atg cct gtg gac atg att	144
Gly Arg Glu Trp Leu Gln Val Arg Arg Leu Met Pro Val Asp Met Ile	
35 40 45	
ctc atc agc ctg ggc atc tct cgc ttc tgt cta cag tgg gca tca atg	192
Leu Ile Ser Leu Gly Ile Ser Arg Phe Cys Leu Gln Trp Ala Ser Met	
50 55 60	
ctg aac aat ttt tgc tcc tat ttt aat ttg aat tat gta ctt tgc aac	240
Leu Asn Asn Phe Cys Ser Tyr Phe Asn Leu Asn Tyr Val Leu Cys Asn	
65 70 75 80	
tta aca atc acc tgg gaa ttt ttt aat atc ctt aca ttc tgg tta aac	288
Leu Thr Ile Thr Trp Glu Phe Phe Asn Ile Leu Thr Phe Trp Leu Asn	
85 90 95	
agc ttg ctt acc gtg ttc tac tgc atc aag gtc tct tct ttc acc cat	336
Ser Leu Leu Thr Val Phe Tyr Cys Ile Lys Val Ser Ser Phe Thr His	
100 105 110	
cac atc ttt ctc tgg ctg agg tgg aga att ttg agg ttg ttt ccc tgg	384
His Ile Phe Leu Trp Leu Arg Trp Arg Ile Leu Arg Leu Phe Pro Trp	
115 120 125	
ata tta ctg ggt tct ctg atg att act tgt gta aca atc atc cct tca	432
Ile Leu Leu Gly Ser Leu Met Ile Thr Cys Val Thr Ile Ile Pro Ser	
130 135 140	
gct att ggg aat tac att caa att cag tta ctc acc atg gag cat cta	480
Ala Ile Gly Asn Tyr Ile Gln Ile Gln Leu Leu Thr Met Glu His Leu	
145 150 155 160	
cca aga aac agc act gta act gac aaa ctt gaa aat ttt cat cag tat	528
Pro Arg Asn Ser Thr Val Thr Asp Lys Leu Glu Asn Phe His Gln Tyr	
165 170 175	
cag ttc cag gct cat aca gtt gca ttg gtt att cct ttc atc ctg ttc	576
Gln Phe Gln Ala His Thr Val Ala Leu Val Ile Pro Phe Ile Leu Phe	
180 185 190	
ctg gcc tcc acc atc ttt ctc atg gca tca ctg acc aag cag ata caa	624
Leu Ala Ser Thr Ile Phe Leu Met Ala Ser Leu Thr Lys Gln Ile Gln	
195 200 205	

cat cat agc act ggt cac tgc aat cca agc atg aaa gcg cgc ttc act 672  
 His His Ser Thr Gly His Cys Asn Pro Ser Met Lys Ala Arg Phe Thr  
 210 215 220

gcc ctg agg tcc ctt gcc gtc tta ttt att gtg ttt acc tct tac ttt 720  
 Ala Leu Arg Ser Leu Ala Val Leu Phe Ile Val Phe Thr Ser Tyr Phe  
 225 230 235 240

cta acc ata ctc atc acc att ata ggt act cta ttt gat aag aga tgt 768  
 Leu Thr Ile Leu Ile Thr Ile Ile Gly Thr Leu Phe Asp Lys Arg Cys  
 245 250 255

tgg tta tgg gtc tgg gaa gct ttt gtc tat gct ttc atc tta atg cat 816  
 Trp Leu Trp Val Trp Glu Ala Phe Val Tyr Ala Phe Ile Leu Met His  
 260 265 270

tcc act tca ctg atg ctg agc agc cct acg ttg aaa agg att cta aag 864  
 Ser Thr Ser Leu Met Leu Ser Ser Pro Thr Leu Lys Arg Ile Leu Lys  
 275 280 285

gga aag tgc tag 876  
 Gly Lys Cys  
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<210> 146  
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 <212> PRT  
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<400> 146

Met Ile Pro Ile Gln Leu Thr Val Phe Phe Met Ile Ile Tyr Val Leu  
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Glu Ser Leu Thr Ile Ile Val Gln Ser Ser Leu Ile Val Ala Val Leu  
 20 25 30

Gly Arg Glu Trp Leu Gln Val Arg Arg Leu Met Pro Val Asp Met Ile  
 35 40 45

Leu Ile Ser Leu Gly Ile Ser Arg Phe Cys Leu Gln Trp Ala Ser Met  
 50 55 60

Leu Asn Asn Phe Cys Ser Tyr Phe Asn Leu Asn Tyr Val Leu Cys Asn  
 65 70 75 80

Leu Thr Ile Thr Trp Glu Phe Phe Asn Ile Leu Thr Phe Trp Leu Asn  
 85 90 95

Ser Leu Leu Thr Val Phe Tyr Cys Ile Lys Val Ser Ser Phe Thr His  
 100 105 110

His Ile Phe Leu Trp Leu Arg Trp Arg Ile Leu Arg Leu Phe Pro Trp  
 115 120 125  
 Ile Leu Leu Gly Ser Leu Met Ile Thr Cys Val Thr Ile Ile Pro Ser  
 130 135 140  
 Ala Ile Gly Asn Tyr Ile Gln Ile Gln Leu Leu Thr Met Glu His Leu  
 145 150 155 160  
 Pro Arg Asn Ser Thr Val Thr Asp Lys Leu Glu Asn Phe His Gln Tyr  
 165 170 175  
 Gln Phe Gln Ala His Thr Val Ala Leu Val Ile Pro Phe Ile Leu Phe  
 180 185 190  
 Leu Ala Ser Thr Ile Phe Leu Met Ala Ser Leu Thr Lys Gln Ile Gln  
 195 200 205  
 His His Ser Thr Gly His Cys Asn Pro Ser Met Lys Ala Arg Phe Thr  
 210 215 220  
 Ala Leu Arg Ser Leu Ala Val Leu Phe Ile Val Phe Thr Ser Tyr Phe  
 225 230 235 240  
 Leu Thr Ile Leu Ile Thr Ile Ile Gly Thr Leu Phe Asp Lys Arg Cys  
 245 250 255  
 Trp Leu Trp Val Trp Glu Ala Phe Val Tyr Ala Phe Ile Leu Met His  
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gag tcc ttg aca att att gtg cag agc agc cta att gtt gca gtg ctg	96
Glu Ser Leu Thr Ile Ile Val Gln Ser Ser Leu Ile Val Ala Val Leu	
20 25 30	
ggc aga gaa tgg ctg caa gtc aga agg ctg atg cct gtg gac atg att	144
Gly Arg Glu Trp Leu Gln Val Arg Arg Leu Met Pro Val Asp Met Ile	
35 40 45	
ctc atc agc ctg ggc atc tct cgc ttc tgt cta cag tgg gca tca atg	192
Leu Ile Ser Leu Gly Ile Ser Arg Phe Cys Leu Gln Trp Ala Ser Met	
50 55 60	
ctg aac aat ttt tgc tcc tat ttt aat ttg aat tat gta ctt tgc aac	240
Leu Asn Asn Phe Cys Ser Tyr Phe Asn Leu Asn Tyr Val Leu Cys Asn	
65 70 75 80	
tta aca atc acc tgg gaa ttt ttt aat atc ctt aca ttc tgg tta aac	288
Leu Thr Ile Thr Trp Glu Phe Phe Asn Ile Leu Thr Phe Trp Leu Asn	
85 90 95	
agc ttg ctt acc gtg ttc tac tgc atc aag gtc tct tct ttc acc cat	336
Ser Leu Leu Thr Val Phe Tyr Cys Ile Lys Val Ser Ser Phe Thr His	
100 105 110	
cac atc ttt ctc tgg ctg agg tgg aga att ttg agg ttg ttt ccc tgg	384
His Ile Phe Leu Trp Leu Arg Trp Arg Ile Leu Arg Leu Phe Pro Trp	
115 120 125	
ata tta ctg ggt tct ctg atg att act tgt gta aca atc atc cct tca	432
Ile Leu Leu Gly Ser Leu Met Ile Thr Cys Val Thr Ile Ile Pro Ser	
130 135 140	
gct att ggg aat tac att caa att cag tta ctc acc atg gag cat cta	480
Ala Ile Gly Asn Tyr Ile Gln Ile Gln Leu Leu Thr Met Glu His Leu	
145 150 155 160	
cca aga aac agc act gta act gac aaa ctt gaa aag ttt cat cag tat	528
Pro Arg Asn Ser Thr Val Thr Asp Lys Leu Glu Lys Phe His Gln Tyr	
165 170 175	

cag ttc cag gct cat aca gtt gca ttg gtt att cct ttc atc ctg ttc 576  
 Gln Phe Gln Ala His Thr Val Ala Leu Val Ile Pro Phe Ile Leu Phe  
 180 185 190

ctg gcc tcc acc atc ttt ctc atg gca tca ctg acc aag cag ata caa 624  
 Leu Ala Ser Thr Ile Phe Leu Met Ala Ser Leu Thr Lys Gln Ile Gln  
 195 200 205

cat cat agc act ggt cac tgc aat cca agc atg aaa gcg cac ttc act 672  
 His His Ser Thr Gly His Cys Asn Pro Ser Met Lys Ala His Phe Thr  
 210 215 220

gcc ctg agg tcc ctt gcc gtc tta ttt att gtg ttt acc tct tac ttt 720  
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 225 230 235 240

cta acc ata ctc atc acc att ata ggt act cta ttt gat aag aga tgt 768  
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 245 250 255

tgg tta tgg gtc tgg gaa gct ttt gtc tat gct ttc atc tta atg cat 816  
 Trp Leu Trp Val Trp Glu Ala Phe Val Tyr Ala Phe Ile Leu Met His  
 260 265 270

tcc act tca ctg atg ctg agc agc cct acg ttg aaa agg att cta aag 864  
 Ser Thr Ser Leu Met Leu Ser Ser Pro Thr Leu Lys Arg Ile Leu Lys  
 275 280 285

gga aag tgc tag 876  
 Gly Lys Cys  
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Gly Arg Glu Trp Leu Gln Val Arg Arg Leu Met Pro Val Asp Met Ile  
 35 40 45

Leu Ile Ser Leu Gly Ile Ser Arg Phe Cys Leu Gln Trp Ala Ser Met  
 50 55 60

Leu Asn Asn Phe Cys Ser Tyr Phe Asn Leu Asn Tyr Val Leu Cys Asn  
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gag tcc ttg aca att att gtg cag agc agc cta att gtt gca gtg ctg 96  
 Glu Ser Leu Thr Ile Ile Val Gln Ser Ser Leu Ile Val Ala Val Leu  
 20 25 30

ggc aga gaa tgg ctg caa gtc aga agg ctg atg cct gtg gac atg att 144  
 Gly Arg Glu Trp Leu Gln Val Arg Arg Leu Met Pro Val Asp Met Ile  
 35 40 45

ctc atc agc ctg ggc atc tct cgc ttc tgt cta cag tgg gca tca atg 192  
 Leu Ile Ser Leu Gly Ile Ser Arg Phe Cys Leu Gln Trp Ala Ser Met  
 50 55 60

ctg aac aat ttt tgc tcc tat ttt aat ttg aat tat gta ctt tgc aac 240  
 Leu Asn Asn Phe Cys Ser Tyr Phe Asn Leu Asn Tyr Val Leu Cys Asn  
 65 70 75 80

tta aca atc acc tgg gaa ttt ttt aat atc ctt aca ttc tgg tta aac 288  
 Leu Thr Ile Thr Trp Glu Phe Phe Asn Ile Leu Thr Phe Trp Leu Asn  
 85 90 95

agc ttg ctt acc gtg ttc tac tgc atc aag gtc tct tct ttc acc cat 336  
 Ser Leu Leu Thr Val Phe Tyr Cys Ile Lys Val Ser Ser Phe Thr His  
 100 105 110

cac atc ttt ctc tgg ctg agg tgg aga att ttg agg ttg ttt ccc tgg 384  
 His Ile Phe Leu Trp Leu Arg Trp Arg Ile Leu Arg Leu Phe Pro Trp  
 115 120 125

ata tta ctg ggt tct ctg atg att act tgt gta aca atc atc cct tca 432  
 Ile Leu Leu Gly Ser Leu Met Ile Thr Cys Val Thr Ile Ile Pro Ser  
 130 135 140

gct att ggg aat tac att caa att cag tta ctc acc atg gag cat cta 480  
 Ala Ile Gly Asn Tyr Ile Gln Ile Gln Leu Leu Thr Met Glu His Leu 160  
 145 150 155  
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 Ser Arg Asn Ser Thr Val Thr Asp Lys Leu Glu Asn Phe His Gln Tyr 175  
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 Gln Phe Gln Ala His Thr Val Ala Leu Val Ile Pro Phe Ile Leu Phe 190  
 180 185  
 ctg gcc tcc acc atc ttt ctc atg gca tca ctg acc aag cag ata caa 624  
 Leu Ala Ser Thr Ile Phe Leu Met Ala Ser Leu Thr Lys Gln Ile Gln 205  
 195 200  
 cat cat agc act ggt cac tgc aat cca agc atg aaa gcg cac ttc act 672  
 His His Ser Thr Gly His Cys Asn Pro Ser Met Lys Ala His Phe Thr 220  
 210 215  
 gcc ctg agg tcc ctt gcc gtc tta ttt att gtg ttt acc tct tac ttt 720  
 Ala Leu Arg Ser Leu Ala Val Leu Phe Ile Val Phe Thr Ser Tyr Phe 240  
 225 230 235  
 cta acc ata ctc atc acc att ata ggt act cta ttt gat aag aga tgt 768  
 Leu Thr Ile Leu Ile Thr Ile Ile Gly Thr Leu Phe Asp Lys Arg Cys 255  
 245 250  
 tgg tta tgg gtc tgg gaa gct ttt gtc tat gct ttc atc tta atg cat 816  
 Trp Leu Trp Val Trp Glu Ala Phe Val Tyr Ala Phe Ile Leu Met His 270  
 260 265  
 tcc act tca ctg atg ctg agc agc cct acg ttg aaa agg att cta aag 864  
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 20 25 30

Gly Arg Glu Trp Leu Gln Val Arg Arg Leu Met Pro Val Asp Met Ile  
 35 40 45



Leu Ile Ser Leu Gly Ile Ser Arg Phe Cys Leu Gln Trp Ala Ser Met  
 50 55 60

Leu Asn Asn Phe Cys Ser Tyr Phe Asn Leu Asn Tyr Val Leu Cys Asn  
 65 70 75 80

Leu Thr Ile Thr Trp Glu Phe Phe Asn Ile Leu Thr Phe Trp Leu Asn  
 85 90 95

Ser Leu Leu Thr Val Phe Tyr Cys Ile Lys Val Ser Ser Phe Thr His  
 100 105 110

His Ile Phe Leu Trp Leu Arg Trp Arg Ile Leu Arg Leu Phe Pro Trp  
 115 120 125

Ile Leu Leu Gly Ser Leu Met Ile Thr Cys Val Thr Ile Ile Pro Ser  
 130 135 140

Ala Ile Gly Asn Tyr Ile Gln Ile Gln Leu Leu Thr Met Glu His Leu  
 145 150 155 160

Ser Arg Asn Ser Thr Val Thr Asp Lys Leu Glu Asn Phe His Gln Tyr  
 165 170 175

Gln Phe Gln Ala His Thr Val Ala Leu Val Ile Pro Phe Ile Leu Phe  
 180 185 190

Leu Ala Ser Thr Ile Phe Leu Met Ala Ser Leu Thr Lys Gln Ile Gln  
 195 200 205

His His Ser Thr Gly His Cys Asn Pro Ser Met Lys Ala His Phe Thr  
 210 215 220

Ala Leu Arg Ser Leu Ala Val Leu Phe Ile Val Phe Thr Ser Tyr Phe  
 225 230 235 240

Leu Thr Ile Leu Ile Thr Ile Ile Gly Thr Leu Phe Asp Lys Arg Cys  
 245 250 255

Trp Leu Trp Val Trp Glu Ala Phe Val Tyr Ala Phe Ile Leu Met His  
 260 265 270

Ser Thr Ser Leu Met Leu Ser Ser Pro Thr Leu Lys Arg Ile Leu Lys  
 275 280 285

Gly Lys Cys

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 1 5 10 15  
 gag tcc ttg aca att att gtg cag agc agc cta att gtt gca gtg ctg 96  
 Glu Ser Leu Thr Ile Ile Val Gln Ser Ser Leu Ile Val Ala Val Leu  
 20 25 30  
 ggc aga gaa tgg ctg caa gtc aga agg ctg atg cct gtg gac atg att 144  
 Gly Arg Glu Trp Leu Gln Val Arg Arg Leu Met Pro Val Asp Met Ile  
 35 40 45  
 ctc atc agc ctg ggc atc tct cgc ttc tgt cta cag tgg gca tca atg 192  
 Leu Ile Ser Leu Gly Ile Ser Arg Phe Cys Leu Gln Trp Ala Ser Met  
 50 55 60  
 ctg aac aat ttt tgc tcc tat ttt aat ttg aat tat gta ctt tgc aac 240  
 Leu Asn Asn Phe Cys Ser Tyr Phe Asn Leu Asn Tyr Val Leu Cys Asn  
 65 70 75 80  
 tta aca atc acc tgg gaa ttt ttt aat atc ctt aca ttc tgg tta aac 288  
 Leu Thr Ile Thr Trp Glu Phe Phe Asn Ile Leu Thr Phe Trp Leu Asn  
 85 90 95  
 agc ttg ctt acc atg ttc tac tgc atc aag gtc tct tct ttc acc cat 336  
 Ser Leu Leu Thr Met Phe Tyr Cys Ile Lys Val Ser Ser Phe Thr His  
 100 105 110

cac atc ttt ctc tgg ctg agg tgg aga att ttg agg ttg ttt ccc tgg His Ile Phe Leu Trp Leu Arg Trp Arg Ile Leu Arg Leu Phe Pro Trp 115 120 125	384
ata tta ctg ggt tct ctg atg att act tgt gta aca atc atc cct tca Ile Leu Leu Gly Ser Leu Met Ile Thr Cys Val Thr Ile Ile Pro Ser 130 135 140	432
gct att ggg aat tac att caa att cag tta ctc acc atg gag cat cta Ala Ile Gly Asn Tyr Ile Gln Ile Gln Leu Leu Thr Met Glu His Leu 145 150 155 160	480
cca aga aac agc act gta act gac aaa ctt gaa aat ttt cat cag tat Pro Arg Asn Ser Thr Val Thr Asp Lys Leu Glu Asn Phe His Gln Tyr 165 170 175	528
cag ttc cag gct cat aca gtt gca ttg gtt att cct ttc atc ctg ttc Gln Phe Gln Ala His Thr Val Ala Leu Val Ile Pro Phe Ile Leu Phe 180 185 190	576
ctg gcc tcc acc atc ttt ctc atg gca tca ctg acc aag cag ata caa Leu Ala Ser Thr Ile Phe Leu Met Ala Ser Leu Thr Lys Gln Ile Gln 195 200 205	624
cat cat agc act ggt cac tgc aat cca agc atg aaa gcg cac ttc act His His Ser Thr Gly His Cys Asn Pro Ser Met Lys Ala His Phe Thr 210 215 220	672
gcc ctg agg tcc ctt gcc gtc tta ttt att gtg ttt acc tct tac ttt Ala Leu Arg Ser Leu Ala Val Leu Phe Ile Val Phe Thr Ser Tyr Phe 225 230 235 240	720
cta acc ata ctc atc acc att ata ggt act cta ttt gat aag aga tgt Leu Thr Ile Leu Ile Thr Ile Ile Gly Thr Leu Phe Asp Lys Arg Cys 245 250 255	768
tgg tta tgg gtc tgg gaa gct ttt gtc tat gct ttc atc tta atg cat Trp Leu Trp Val Trp Glu Ala Phe Val Tyr Ala Phe Ile Leu Met His 260 265 270	816
tcc act tca ctg atg ctg agc agc cct acg ttg aaa agg att cta aag Ser Thr Ser Leu Met Leu Ser Ser Pro Thr Leu Lys Arg Ile Leu Lys 275 280 285	864
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Glu Ser Leu Thr Ile Ile Val Gln Ser Ser Leu Ile Val Ala Val Leu  
 20 25 30

Gly Arg Glu Trp Leu Gln Val Arg Arg Leu Met Pro Val Asp Met Ile  
 35 40 45

Leu Ile Ser Leu Gly Ile Ser Arg Phe Cys Leu Gln Trp Ala Ser Met  
 50 55 60

Leu Asn Asn Phe Cys Ser Tyr Phe Asn Leu Asn Tyr Val Leu Cys Asn  
 65 70 75 80

Leu Thr Ile Thr Trp Glu Phe Phe Asn Ile Leu Thr Phe Trp Leu Asn  
 85 90 95

Ser Leu Leu Thr Met Phe Tyr Cys Ile Lys Val Ser Ser Phe Thr His  
 100 105 110

His Ile Phe Leu Trp Leu Arg Trp Arg Ile Leu Arg Leu Phe Pro Trp  
 115 120 125

Ile Leu Leu Gly Ser Leu Met Ile Thr Cys Val Thr Ile Ile Pro Ser  
 130 135 140

Ala Ile Gly Asn Tyr Ile Gln Ile Gln Leu Leu Thr Met Glu His Leu  
 145 150 155 160

Pro Arg Asn Ser Thr Val Thr Asp Lys Leu Glu Asn Phe His Gln Tyr  
 165 170 175

Gln Phe Gln Ala His Thr Val Ala Leu Val Ile Pro Phe Ile Leu Phe  
 180 185 190

Leu Ala Ser Thr Ile Phe Leu Met Ala Ser Leu Thr Lys Gln Ile Gln  
 195 200 205

His His Ser Thr Gly His Cys Asn Pro Ser Met Lys Ala His Phe Thr  
 210 215 220

Ala Leu Arg Ser Leu Ala Val Leu Phe Ile Val Phe Thr Ser Tyr Phe  
 225 230 235 240

Leu Thr Ile Leu Ile Thr Ile Ile Gly Thr Leu Phe Asp Lys Arg Cys  
 245 250 255

Trp Leu Trp Val Trp Glu Ala Phe Val Tyr Ala Phe Ile Leu Met His

260

265

270

Ser Thr Ser Leu Met Leu Ser Ser Pro Thr Leu Lys Arg Ile Leu Lys  
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Gly Lys Cys  
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 Thr Phe Leu Phe Ile Ser Val Leu Glu Phe Ala Val Gly Phe Leu Thr  
 20 25 30  
 aat gcc ttc gtt ttc ttg gtg aat ttt tgg gat gta gtg aag agg cag 144  
 Asn Ala Phe Val Phe Leu Val Asn Phe Trp Asp Val Val Lys Arg Gln  
 35 40 45  
 cca ctg agc aac agt gat tgt gtg ctg ctg tgt ctc agc atc agc cgg 192  
 Pro Leu Ser Asn Ser Asp Cys Val Leu Leu Cys Leu Ser Ile Ser Arg

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ctt ttc ctg cat gga ctg ctg ttc ctg agt gct atc cag ctt acc cac Leu Phe Leu His Gly Leu Leu Phe Leu Ser Ala Ile Gln Leu Thr His 65 70 75 80			240
ttc cag aag ttg agt gaa cca ctg aac cac agc tac caa gcc atc atc Phe Gln Lys Leu Ser Glu Pro Leu Asn His Ser Tyr Gln Ala Ile Ile 85 90 95			288
atg cta tgg atg att gca aac caa gcc aac ctc tgg ctt gct gcc tgc Met Leu Trp Met Ile Ala Asn Gln Ala Asn Leu Trp Leu Ala Ala Cys 100 105 110			336
ctc agc ctg ctt tac tgc tcc aag ctc atc cgt ttc tct cac acc ttc Leu Ser Leu Leu Tyr Cys Ser Lys Leu Ile Arg Phe Ser His Thr Phe 115 120 125			384
ctg atc tgc ttg gca agc tgg gtc tcc agg aag atc tcc cag atg ctc Leu Ile Cys Leu Ala Ser Trp Val Ser Arg Lys Ile Ser Gln Met Leu 130 135 140			432
ctg ggt att att ctt tgc tcc tgc atc tgc act gtc ctc tgt gtt tgg Leu Gly Ile Ile Leu Cys Ser Cys Ile Cys Thr Val Leu Cys Val Trp 145 150 155 160			480
tgc ttt ttt agc aga cct cac ttc aca gtc aca act gtg cta ttc atg Cys Phe Phe Ser Arg Pro His Phe Thr Val Thr Thr Val Leu Phe Met 165 170 175			528
aat aac aat aca agg ctc aac tgg cag att aaa gat ctc aat tta ttt Asn Asn Asn Thr Arg Leu Asn Trp Gln Ile Lys Asp Leu Asn Leu Phe 180 185 190			576
tat tcc ttt ctc ttc tgc tat ctg tgg tct gtg cct cct ttc cta ttg Tyr Ser Phe Leu Phe Cys Tyr Leu Trp Ser Val Pro Pro Phe Leu Leu 195 200 205			624
ttt ctg gtt tct tct ggg atg ctg act gtc tcc ctg gga agg cac atg Phe Leu Val Ser Ser Gly Met Leu Thr Val Ser Leu Gly Arg His Met 210 215 220			672
agg aca atg aag gtc tat acc aga aac tct cgt gac ccc agc ctg gag Arg Thr Met Lys Val Tyr Thr Arg Asn Ser Arg Asp Pro Ser Leu Glu 225 230 235 240			720
gcc cac att aaa gcc ctc aag tct ctt gtc tcc ttt ttc tgc ttc ttt Ala His Ile Lys Ala Leu Lys Ser Leu Val Ser Phe Phe Cys Phe Phe 245 250 255			768
gtg ata tca tcc tgt gct gcc ttc atc tct gtg ccc cta ctg att ctg Val Ile Ser Ser Cys Ala Ala Phe Ile Ser Val Pro Leu Leu Ile Leu 260 265 270			816
tgg cgc gac aaa ata ggg gtg atg gtt tgt gtt ggg ata atg gca gct Trp Arg Asp Lys Ile Gly Val Met Val Cys Val Gly Ile Met Ala Ala 275 280 285			864
tgt ccc tct ggg cat gca gcc gtc ctg atc tca ggc aat gcc aag ttg Cys Pro Ser Gly His Ala Ala Val Leu Ile Ser Gly Asn Ala Lys Leu 290 295 300			912

agg aga gct gtg atg acc att ctg ctc tgg gct cag agc agc ctg aag 960  
 Arg Arg Ala Val Met Thr Ile Leu Leu Trp Ala Gln Ser Ser Leu Lys  
 305 310 315 320

gta aga gcc gac cac aag gca gat tcc cgg aca ctg tgc tga 1002  
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 325 330

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<400> 154

Met Leu Thr Leu Thr Arg Ile Arg Thr Val Ser Tyr Glu Val Arg Ser  
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Thr Phe Leu Phe Ile Ser Val Leu Glu Phe Ala Val Gly Phe Leu Thr  
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Asn Ala Phe Val Phe Leu Val Asn Phe Trp Asp Val Val Lys Arg Gln  
 35 40 45

Pro Leu Ser Asn Ser Asp Cys Val Leu Leu Cys Leu Ser Ile Ser Arg  
 50 55 60

Leu Phe Leu His Gly Leu Leu Phe Leu Ser Ala Ile Gln Leu Thr His  
 65 70 75 80

Phe Gln Lys Leu Ser Glu Pro Leu Asn His Ser Tyr Gln Ala Ile Ile  
 85 90 95

Met Leu Trp Met Ile Ala Asn Gln Ala Asn Leu Trp Leu Ala Ala Cys  
 100 105 110

Leu Ser Leu Leu Tyr Cys Ser Lys Leu Ile Arg Phe Ser His Thr Phe  
 115 120 125

Leu Ile Cys Leu Ala Ser Trp Val Ser Arg Lys Ile Ser Gln Met Leu  
 130 135 140

Leu Gly Ile Ile Leu Cys Ser Cys Ile Cys Thr Val Leu Cys Val Trp  
 145 150 155 160

Cys Phe Phe Ser Arg Pro His Phe Thr Val Thr Thr Val Leu Phe Met  
 165 170 175

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Asn Asn Asn Thr Arg Leu Asn Trp Gln Ile Lys Asp Leu Asn Leu Phe  
 180 185 190

Tyr Ser Phe Leu Phe Cys Tyr Leu Trp Ser Val Pro Pro Phe Leu Leu  
 195 200 205

Phe Leu Val Ser Ser Gly Met Leu Thr Val Ser Leu Gly Arg His Met  
 210 215 220

Arg Thr Met Lys Val Tyr Thr Arg Asn Ser Arg Asp Pro Ser Leu Glu  
 225 230 235 240

Ala His Ile Lys Ala Leu Lys Ser Leu Val Ser Phe Phe Cys Phe Phe  
 245 250 255

Val Ile Ser Ser Cys Ala Ala Phe Ile Ser Val Pro Leu Leu Ile Leu  
 260 265 270

Trp Arg Asp Lys Ile Gly Val Met Val Cys Val Gly Ile Met Ala Ala  
 275 280 285

Cys Pro Ser Gly His Ala Ala Val Leu Ile Ser Gly Asn Ala Lys Leu  
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Trp	Arg	Asp	Lys	Ile	Gly	Val	Met	Val	Cys	Val	Gly	Ile	Met	Ala	Ala	
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Leu	Ser	Leu 115	Leu	Tyr	Cys	Ser	Lys 120	Leu	Ile	Arg	Phe	Ser 125	His	Thr	Phe
Leu	Ile 130	Cys	Leu	Ala	Ser	Trp 135	Val	Ser	Arg	Lys	Ile 140	Ser	Gln	Met	Leu
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Cys	Phe	Phe	Ser	Arg 165	Pro	His	Phe	Thr	Val 170	Thr	Thr	Val	Leu	Phe 175	Met
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269/447

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Val	Ile	Ser	Ser	Cys	Ala	Ala	Phe	Ile	Ser	Val	Pro	Leu	Leu	Ile	Leu		
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Trp	Arg	Asp	Lys	Ile	Gly	Val	Met	Val	Cys	Val	Gly	Ile	Met	Ala	Ala		
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Cys	Pro	Ser	Gly	His	Ala	Ala	Ile	Leu	Ile	Ser	Gly	Asn	Ala	Lys	Leu		
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 <222> (820)..(820)  
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 <222> (886)..(886)  
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<400> 161  
 atg ttg act cta act cgc atc cgc act gtg tcc tat gaa gtc agg agt 48  
 Met Leu Thr Leu Thr Arg Ile Arg Thr Val Ser Tyr Glu Val Arg Ser  
 1 5 10 15  
 aca ttt ctg ttc att tca gtc ctg gag ttt gca gtg ggg ttt ctg acc 96  
 Thr Phe Leu Phe Ile Ser Val Leu Glu Phe Ala Val Gly Phe Leu Thr  
 20 25 30  
 aat gcc ttc gtt ttc ttg gtg aat ttt tgg gat gta gtg aag agg cag 144  
 Asn Ala Phe Val Phe Leu Val Asn Phe Trp Asp Val Val Lys Arg Gln  
 35 40 45  
 gca ctg agc aac agt gat tgt gtg ctg ctg tgt ctc agc atc agc cgg 192  
 Ala Leu Ser Asn Ser Asp Cys Val Leu Leu Cys Leu Ser Ile Ser Arg  
 50 55 60  
 ctt ttc ctg cat gga ctg ctg ttc ctg agt gct atc cag ctt acc cac 240  
 Leu Phe Leu His Gly Leu Leu Phe Leu Ser Ala Ile Gln Leu Thr His  
 65 70 75 80

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ttc cag aag ttg agt gaa cca ctg aac cac agc tac caa gcc atc atc Phe Gln Lys Leu Ser Glu Pro Leu Asn His Ser Tyr Gln Ala Ile Ile 85 90 95	288
atg cta tgg atg att gca aac caa gcc aac ctc tgg ctt gct gcc tgc Met Leu Trp Met Ile Ala Asn Gln Ala Asn Leu Trp Leu Ala Ala Cys 100 105 110	336
ctc agc ctg ctt tac tgc tcc aag ctc atc cgt ttc tct cac acc ttc Leu Ser Leu Leu Tyr Cys Ser Lys Leu Ile Arg Phe Ser His Thr Phe 115 120 125	384
ctg atc tgc ttg gca agc tgg gtc tcc agg aag atc tcc cag atg ctc Leu Ile Cys Leu Ala Ser Trp Val Ser Arg Lys Ile Ser Gln Met Leu 130 135 140	432
ctg ggt att att ctt tgc tcc tgc atc tgc act gtc ctc tgt gtt tgg Leu Gly Ile Ile Leu Cys Ser Cys Ile Cys Thr Val Leu Cys Val Trp 145 150 155 160	480
tgc ttt ttt agc aga cct cac ttc aca gtc aca act gtg cta ttc atg Cys Phe Phe Ser Arg Pro His Phe Thr Val Thr Thr Val Leu Phe Met 165 170 175	528
aat aac aat aca agg ctc aac tgg cag att aaa gat ctc aat tta ttt Asn Asn Asn Thr Arg Leu Asn Trp Gln Ile Lys Asp Leu Asn Leu Phe 180 185 190	576
tat tcc ttt ctc ttc tgc tat ctg tgg tct gtg cct cct ttc cta ttg Tyr Ser Phe Leu Phe Cys Tyr Leu Trp Ser Val Pro Pro Phe Leu Leu 195 200 205	624
ttt ctg gtt tct tct ggg atg ctg act gtc tcc ctg gga agg cac atg Phe Leu Val Ser Ser Gly Met Leu Thr Val Ser Leu Gly Arg His Met 210 215 220	672
agg aca atg aag gtc tat acc aga aac tct cgt gac ccc agc ctg gag Arg Thr Met Lys Val Tyr Thr Arg Asn Ser Arg Asp Pro Ser Leu Glu 225 230 235 240	720
gcc cac att aaa gcc ctc aag tct ctt gtc tcc ttt ttc tgc ttc ttt Ala His Ile Lys Ala Leu Lys Ser Leu Val Ser Phe Phe Cys Phe Phe 245 250 255	768
gtg ata tca tcc tgt gct gcc ttc atc tct gtg ccc cta ctg att ctg Val Ile Ser Ser Cys Ala Ala Phe Ile Ser Val Pro Leu Leu Ile Leu 260 265 270	816
tgg cgc gac aaa ata ggg gtg atg gtt tgt gtt ggg ata atg gca gct Trp Arg Asp Lys Ile Gly Val Met Val Cys Val Gly Ile Met Ala Ala 275 280 285	864
tgt ccc tct ggg cat gca gcc gtc ctg atc tca ggc aat gcc aag ttg Cys Pro Ser Gly His Ala Val Leu Ile Ser Gly Asn Ala Lys Leu 290 295 300	912
agg aga gct gtg atg acc att ctg ctc tgg gct cag agc agc ctg aag Arg Arg Ala Val Met Thr Ile Leu Leu Trp Ala Gln Ser Ser Leu Lys 305 310 315 320	960
gta aga gcc gac cac aag gca gat tcc cgg aca ctg tgc tga	1002

Val Arg Ala Asp His Lys Ala Asp Ser Arg Thr Leu Cys  
 325 330

<210> 162  
 <211> 333  
 <212> PRT  
 <213> homo sapiens

<400> 162

Met Leu Thr Leu Thr Arg Ile Arg Thr Val Ser Tyr Glu Val Arg Ser  
 1 5 10 15

Thr Phe Leu Phe Ile Ser Val Leu Glu Phe Ala Val Gly Phe Leu Thr  
 20 25 30

Asn Ala Phe Val Phe Leu Val Asn Phe Trp Asp Val Val Lys Arg Gln  
 35 40 45

Ala Leu Ser Asn Ser Asp Cys Val Leu Leu Cys Leu Ser Ile Ser Arg  
 50 55 60

Leu Phe Leu His Gly Leu Leu Phe Leu Ser Ala Ile Gln Leu Thr His  
 65 70 75 80

Phe Gln Lys Leu Ser Glu Pro Leu Asn His Ser Tyr Gln Ala Ile Ile  
 85 90 95

Met Leu Trp Met Ile Ala Asn Gln Ala Asn Leu Trp Leu Ala Ala Cys  
 100 105 110

Leu Ser Leu Leu Tyr Cys Ser Lys Leu Ile Arg Phe Ser His Thr Phe  
 115 120 125

Leu Ile Cys Leu Ala Ser Trp Val Ser Arg Lys Ile Ser Gln Met Leu  
 130 135 140

Leu Gly Ile Ile Leu Cys Ser Cys Ile Cys Thr Val Leu Cys Val Trp  
 145 150 155 160

Cys Phe Phe Ser Arg Pro His Phe Thr Val Thr Thr Val Leu Phe Met  
 165 170 175

Asn Asn Asn Thr Arg Leu Asn Trp Gln Ile Lys Asp Leu Asn Leu Phe  
 180 185 190

Tyr Ser Phe Leu Phe Cys Tyr Leu Trp Ser Val Pro Pro Phe Leu Leu  
 195 200 205

Phe Leu Val Ser Ser Gly Met Leu Thr Val Ser Leu Gly Arg His Met  
210 215 220

Arg Thr Met Lys Val Tyr Thr Arg Asn Ser Arg Asp Pro Ser Leu Glu  
225 230 235 240

Ala His Ile Lys Ala Leu Lys Ser Leu Val Ser Phe Phe Cys Phe Phe  
245 250 255

Val Ile Ser Ser Cys Ala Ala Phe Ile Ser Val Pro Leu Leu Ile Leu  
260 265 270

Trp Arg Asp Lys Ile Gly Val Met Val Cys Val Gly Ile Met Ala Ala  
275 280 285

Cys Pro Ser Gly His Ala Ala Val Leu Ile Ser Gly Asn Ala Lys Leu  
290 295 300

Arg Arg Ala Val Met Thr Ile Leu Leu Trp Ala Gln Ser Ser Leu Lys  
305 310 315 320

Val Arg Ala Asp His Lys Ala Asp Ser Arg Thr Leu Cys  
325 330

<210> 163  
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<220>  
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<220>  
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<222> (239)..(239)  
<223> SNP

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<222> (785)..(785)  
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<220>  
<221> variation

&lt;222&gt; (820)..(820)

&lt;223&gt; SNP

&lt;220&gt;

&lt;221&gt; variation

&lt;222&gt; (886)..(886)

&lt;223&gt; SNP

&lt;400&gt; 163

atg ttg act cta act cgc atc cgc act gtg tcc tat gaa gtc agg agt	48
Met Leu Thr Leu Thr Arg Ile Arg Thr Val Ser Tyr Glu Val Arg Ser	
1 5 10 15	
aca ttt ctg ttc att tca gtc ctg gag ttt gca gtg ggg ttt ctg acc	96
Thr Phe Leu Phe Ile Ser Val Leu Glu Phe Ala Val Gly Phe Leu Thr	
20 25 30	
aat gcc ttc gtt ttc ttg gtg aat ttt tgg gat gta gtg aag agg cag	144
Asn Ala Phe Val Phe Leu Val Asn Phe Trp Asp Val Val Lys Arg Gln	
35 40 45	
gca ctg agc aac agt gat tgt gtg ctg ctg tgt ctc agc atc agc cgg	192
Ala Leu Ser Asn Ser Asp Cys Val Leu Leu Cys Leu Ser Ile Ser Arg	
50 55 60	
ctt ttc ctg cat gga ctg ctg ttc ctg agt gct atc cag ctt acc cac	240
Leu Phe Leu His Gly Leu Leu Phe Leu Ser Ala Ile Gln Leu Thr His	
65 70 75 80	
ttc cag aag ttg agt gaa cca ctg aac cac agc tac caa gcc atc atc	288
Phe Gln Lys Leu Ser Glu Pro Leu Asn His Ser Tyr Gln Ala Ile Ile	
85 90 95	
atg cta tgg atg att gca aac caa gcc aac ctc tgg ctt gct gcc tgc	336
Met Leu Trp Met Ile Ala Asn Gln Ala Asn Leu Trp Leu Ala Ala Cys	
100 105 110	
ctc agc ctg ctt tac tgc tcc aag ctc atc cgt ttc tct cac acc ttc	384
Leu Ser Leu Leu Tyr Cys Ser Lys Leu Ile Arg Phe Ser His Thr Phe	
115 120 125	
ctg atc tgc ttg gca agc tgg gtc tcc agg aag atc tcc cag atg ctc	432
Leu Ile Cys Leu Ala Ser Trp Val Ser Arg Lys Ile Ser Gln Met Leu	
130 135 140	
ctg ggt att att ctt tgc tcc tgc atc tgc act gtg ctc tgt gtt tgg	480
Leu Gly Ile Ile Leu Cys Ser Cys Ile Cys Thr Val Leu Cys Val Trp	
145 150 155 160	
tgc ttt ttt agc aga cct cac ttc aca gtc aca act gtg cta ttc atg	528
Cys Phe Phe Ser Arg Pro His Phe Thr Val Thr Thr Val Leu Phe Met	
165 170 175	
aat aac aat aca agg ctc aac tgg cag att aaa gat ctc aat tta ttt	576
Asn Asn Asn Thr Arg Leu Asn Trp Gln Ile Lys Asp Leu Asn Leu Phe	
180 185 190	
tat tcc ttt ctc ttc tgc tat ctg tgg tct gtg cct cct ttc cta ttg	624
Tyr Ser Phe Leu Phe Cys Tyr Leu Trp Ser Val Pro Pro Phe Leu Leu	
195 200 205	

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ttt ctg gtt tct tct ggg atg ctg act gtc tcc ctg gga agg cac atg Phe Leu Val Ser Ser Gly Met Leu Thr Val Ser Leu Gly Arg His Met 210 215 220	672
agg aca atg aag gtc tat acc aga aac tct cgt gac ccc agc ctg gag Arg Thr Met Lys Val Tyr Thr Arg Asn Ser Arg Asp Pro Ser Leu Glu 225 230 235 240	720
gcc cac att aaa gcc ctc aag tct ctt gtc tcc ttt ttc tgc ttc ttt Ala His Ile Lys Ala Leu Lys Ser Leu Val Ser Phe Phe Cys Phe Phe 245 250 255	768
gtg ata tca tcc tgt gct gcc ttc atc tct gtg ccc cta ctg att ctg Val Ile Ser Ser Cys Ala Ala Phe Ile Ser Val Pro Leu Leu Ile Leu 260 265 270	816
tgg tgc gac aaa ata ggg gtg atg gtt tgt gtt ggg ata atg gca gct Trp Cys Asp Lys Ile Gly Val Met Val Cys Val Gly Ile Met Ala Ala 275 280 285	864
tgt ccc tct ggg cat gca gcc atc ctg atc tca ggc aat gcc aag ttg Cys Pro Ser Gly His Ala Ala Ile Leu Ile Ser Gly Asn Ala Lys Leu 290 295 300	912
agg aga gct gtg atg acc att ctg ctc tgg gct cag agc agc ctg aag Arg Arg Ala Val Met Thr Ile Leu Leu Trp Ala Gln Ser Ser Leu Lys 305 310 315 320	960
gta aga gcc gac cac aag gca gat tcc cgg aca ctg tgc tga Val Arg Ala Asp His Lys Ala Asp Ser Arg Thr Leu Cys 325 330	1002

<210> 164  
 <211> 333  
 <212> PRT  
 <213> homo sapiens

<400> 164

Met Leu Thr Leu Thr Arg Ile Arg Thr Val Ser Tyr Glu Val Arg Ser  
1 5 10 15

Thr Phe Leu Phe Ile Ser Val Leu Glu Phe Ala Val Gly Phe Leu Thr  
20 25 30

Asn Ala Phe Val Phe Leu Val Asn Phe Trp Asp Val Val Lys Arg Gln  
35 40 45

Ala Leu Ser Asn Ser Asp Cys Val Leu Leu Cys Leu Ser Ile Ser Arg  
50 55 60

Leu Phe Leu His Gly Leu Leu Phe Leu Ser Ala Ile Gln Leu Thr His  
65 70 75 80

Phe Gln Lys Leu Ser Glu Pro Leu Asn His Ser Tyr Gln Ala Ile Ile



85

90

95

Met Leu Trp Met Ile Ala Asn Gln Ala Asn Leu Trp Leu Ala Ala Cys  
 100 105 110

Leu Ser Leu Leu Tyr Cys Ser Lys Leu Ile Arg Phe Ser His Thr Phe  
 115 120 125

Leu Ile Cys Leu Ala Ser Trp Val Ser Arg Lys Ile Ser Gln Met Leu  
 130 135 140

Leu Gly Ile Ile Leu Cys Ser Cys Ile Cys Thr Val Leu Cys Val Trp  
 145 150 155 160

Cys Phe Phe Ser Arg Pro His Phe Thr Val Thr Thr Val Leu Phe Met  
 165 170 175

Asn Asn Asn Thr Arg Leu Asn Trp Gln Ile Lys Asp Leu Asn Leu Phe  
 180 185 190

Tyr Ser Phe Leu Phe Cys Tyr Leu Trp Ser Val Pro Pro Phe Leu Leu  
 195 200 205

Phe Leu Val Ser Ser Gly Met Leu Thr Val Ser Leu Gly Arg His Met  
 210 215 220

Arg Thr Met Lys Val Tyr Thr Arg Asn Ser Arg Asp Pro Ser Leu Glu  
 225 230 235 240

Ala His Ile Lys Ala Leu Lys Ser Leu Val Ser Phe Phe Cys Phe Phe  
 245 250 255

Val Ile Ser Ser Cys Ala Ala Phe Ile Ser Val Pro Leu Leu Ile Leu  
 260 265 270

Trp Cys Asp Lys Ile Gly Val Met Val Cys Val Gly Ile Met Ala Ala  
 275 280 285

Cys Pro Ser Gly His Ala Ala Ile Leu Ile Ser Gly Asn Ala Lys Leu  
 290 295 300

Arg Arg Ala Val Met Thr Ile Leu Leu Trp Ala Gln Ser Ser Leu Lys  
 305 310 315 320

Val Arg Ala Asp His Lys Ala Asp Ser Arg Thr Leu Cys  
 325 330

<210> 165  
 <211> 1002  
 <212> DNA  
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<220>  
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<220>  
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 <222> (820)..(820)  
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 <222> (886)..(886)  
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<400> 165  
 atg ttg act cta act cgc atc cgc act gtg tcc tat gaa gtc agg agt 48  
 Met Leu Thr Leu Thr Arg Ile Arg Thr Val Ser Tyr Glu Val Arg Ser  
 1 5 10 15  
 aca ttt ctg ttc att tca gtc ctg gag ttt gca gtg ggg ttt ctg acc 96  
 Thr Phe Leu Phe Ile Ser Val Leu Glu Phe Ala Val Gly Phe Leu Thr  
 20 25 30  
 aat gcc ttc gtt ttc ttg gtg aat ttt tgg gat gta gtg aag agg cag 144  
 Asn Ala Phe Val Phe Leu Val Asn Phe Trp Asp Val Val Lys Arg Gln  
 35 40 45  
 gca ctg agc aac agt gat tgt gtg ctg ctg tgt ctc agc atc agc cgg 192  
 Ala Leu Ser Asn Ser Asp Cys Val Leu Leu Cys Leu Ser Ile Ser Arg  
 50 55 60  
 ctt ttc ctg cat gga ctg ctg ttc ctg agt gct atc cag ctt acc cac 240  
 Leu Phe Leu His Gly Leu Leu Phe Leu Ser Ala Ile Gln Leu Thr His  
 65 70 75 80  
 ttc cag aag ttg agt gaa cca ctg aac cac agc tac caa gcc atc atc 288  
 Phe Gln Lys Leu Ser Glu Pro Leu Asn His Ser Tyr Gln Ala Ile Ile  
 85 90 95

atg cta tgg atg att gca aac caa gcc aac ctc tgg ctt gct gcc tgc Met Leu Trp Met Ile Ala Asn Gln Ala Asn Leu Trp Leu Ala Ala Cys 100 105 110	336
ctc agc ctg ctt tac tgc tcc aag ctc atc cgt ttc tct cac acc ttc Leu Ser Leu Leu Tyr Cys Ser Lys Leu Ile Arg Phe Ser His Thr Phe 115 120 125	384
ctg atc tgc ttg gca agc tgg gtc tcc agg aag atc tcc cag atg ctc Leu Ile Cys Leu Ala Ser Trp Val Ser Arg Lys Ile Ser Gln Met Leu 130 135 140	432
ctg ggt att att ctt tgc tcc tgc atc tgc act gtc ctc tgt gtt tgg Leu Gly Ile Ile Leu Cys Ser Cys Ile Cys Thr Val Leu Cys Val Trp 145 150 155 160	480
tgc ttt ttt agc aga cct cac ttc aca gtc aca act gtg cta ttc atg Cys Phe Phe Ser Arg Pro His Phe Thr Val Thr Thr Val Leu Phe Met 165 170 175	528
aat aac aat aca agg ctc aac tgg cag att aaa gat ctc aat tta ttt Asn Asn Asn Thr Arg Leu Asn Trp Gln Ile Lys Asp Leu Asn Leu Phe 180 185 190	576
tat tcc ttt ctc ttc tgc tat ctg tgg tct gtg cct cct ttc cta ttg Tyr Ser Phe Leu Phe Cys Tyr Leu Trp Ser Val Pro Pro Phe Leu Leu 195 200 205	624
ttt ctg gtt tct tct ggg atg ctg act gtc tcc ctg gga agg cac atg Phe Leu Val Ser Ser Gly Met Leu Thr Val Ser Leu Gly Arg His Met 210 215 220	672
agg aca atg aag gtc tat acc aga aac tct cgt gac ccc agc ctg gag Arg Thr Met Lys Val Tyr Thr Arg Asn Ser Arg Asp Pro Ser Leu Glu 225 230 235 240	720
gcc cac att aaa gcc ctc aag tct ctt gtc tcc ttt ttc tgc ttc ttt Ala His Ile Lys Ala Leu Lys Ser Leu Val Ser Phe Phe Cys Phe Phe 245 250 255	768
gtg ata tca tcc tgt gtt gcc ttc atc tct gtg ccc cta ctg att ctg Val Ile Ser Ser Cys Val Ala Phe Ile Ser Val Pro Leu Leu Ile Leu 260 265 270	816
tgg cgc gac aaa ata ggg gtg atg gtt tgt gtt ggg ata atg gca gct Trp Arg Asp Lys Ile Gly Val Met Val Cys Val Gly Ile Met Ala Ala 275 280 285	864
tgt ccc tct ggg cat gca gcc atc ctg atc tca ggc aat gcc aag ttg Cys Pro Ser Gly His Ala Ala Ile Leu Ile Ser Gly Asn Ala Lys Leu 290 295 300	912
agg aga gct gtg atg acc att ctg ctc tgg gct cag agc agc ctg aag Arg Arg Ala Val Met Thr Ile Leu Leu Trp Ala Gln Ser Ser Leu Lys 305 310 315 320	960
gta aga gcc gac cac aag gca gat tcc cgg aca ctg tgc tga Val Arg Ala Asp His Lys Ala Asp Ser Arg Thr Leu Cys 325 330	1002

<210> 166  
<211> 333  
<212> PRT  
<213> homo sapiens

<400> 166

Met Leu Thr Leu Thr Arg Ile Arg Thr Val Ser Tyr Glu Val Arg Ser  
1 5 10 15

Thr Phe Leu Phe Ile Ser Val Leu Glu Phe Ala Val Gly Phe Leu Thr  
20 25 30

Asn Ala Phe Val Phe Leu Val Asn Phe Trp Asp Val Val Lys Arg Gln  
35 40 45

Ala Leu Ser Asn Ser Asp Cys Val Leu Leu Cys Leu Ser Ile Ser Arg  
50 55 60

Leu Phe Leu His Gly Leu Leu Phe Leu Ser Ala Ile Gln Leu Thr His  
65 70 75 80

Phe Gln Lys Leu Ser Glu Pro Leu Asn His Ser Tyr Gln Ala Ile Ile  
85 90 95

Met Leu Trp Met Ile Ala Asn Gln Ala Asn Leu Trp Leu Ala Ala Cys  
100 105 110

Leu Ser Leu Leu Tyr Cys Ser Lys Leu Ile Arg Phe Ser His Thr Phe  
115 120 125

Leu Ile Cys Leu Ala Ser Trp Val Ser Arg Lys Ile Ser Gln Met Leu  
130 135 140

Leu Gly Ile Ile Leu Cys Ser Cys Ile Cys Thr Val Leu Cys Val Trp  
145 150 155 160

Cys Phe Phe Ser Arg Pro His Phe Thr Val Thr Thr Val Leu Phe Met  
165 170 175

Asn Asn Asn Thr Arg Leu Asn Trp Gln Ile Lys Asp Leu Asn Leu Phe  
180 185 190

Tyr Ser Phe Leu Phe Cys Tyr Leu Trp Ser Val Pro Pro Phe Leu Leu  
195 200 205

Phe Leu Val Ser Ser Gly Met Leu Thr Val Ser Leu Gly Arg His Met

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210

215

220

Arg Thr Met Lys Val Tyr Thr Arg Asn Ser Arg Asp Pro Ser Leu Glu  
 225 230 235 240

Ala His Ile Lys Ala Leu Lys Ser Leu Val Ser Phe Phe Cys Phe Phe  
 245 250 255

Val Ile Ser Ser Cys Val Ala Phe Ile Ser Val Pro Leu Leu Ile Leu  
 260 265 270

Trp Arg Asp Lys Ile Gly Val Met Val Cys Val Gly Ile Met Ala Ala  
 275 280 285

Cys Pro Ser Gly His Ala Ala Ile Leu Ile Ser Gly Asn Ala Lys Leu  
 290 295 300

Arg Arg Ala Val Met Thr Ile Leu Leu Trp Ala Gln Ser Ser Leu Lys  
 305 310 315 320

Val Arg Ala Asp His Lys Ala Asp Ser Arg Thr Leu Cys  
 325 330

<210> 167  
 <211> 1017  
 <212> DNA  
 <213> homo sapiens

<220>  
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 <222> (1)..(1017)

<220>  
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 <222> (578)..(578)  
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 <223> SNP

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 Met Leu Gly Arg Cys Phe Pro Pro Asp Thr Lys Glu Lys Gln Gln Leu  
 1 5 10 15  
 aga atg act aaa ctc tgc gat cct gca gaa agt gaa ttg tcg cca ttt 96  
 Arg Met Thr Lys Leu Cys Asp Pro Ala Glu Ser Glu Leu Ser Pro Phe  
 20 25 30  
 ctc atc acc tta att tta gca gtt tta ctt gct gaa tac ctc att ggt 144

Leu Ile Thr Leu Ile Leu Ala Val Leu Leu Ala Glu Tyr Leu Ile Gly	
35 40 45	
atc att gca aat ggt ttc atc atg gct ata cat gca gct gaa tgg gtt	192
Ile Ile Ala Asn Gly Phe Ile Met Ala Ile His Ala Ala Glu Trp Val	
50 55 60	
caa aat aag gca gtt tcc aca agt ggc agg atc ctg gtt ttc ctg agt	240
Gln Asn Lys Ala Val Ser Thr Ser Gly Arg Ile Leu Val Phe Leu Ser	
65 70 75 80	
gta tcc aga ata gct ctc caa agc ctc atg atg tta gaa att acc atc	288
Val Ser Arg Ile Ala Leu Gln Ser Leu Met Met Leu Glu Ile Thr Ile	
85 90 95	
agc tca acc tcc cta agt ttt tat tct gaa gac gct gta tat tat gca	336
Ser Ser Thr Ser Leu Ser Phe Tyr Ser Glu Asp Ala Val Tyr Tyr Ala	
100 105 110	
ttc aaa ata agt ttt ata ttc tta aat ttt tgt agc ctg tgg ttt gct	384
Phe Lys Ile Ser Phe Ile Phe Leu Asn Phe Cys Ser Leu Trp Phe Ala	
115 120 125	
gcc tgg ctc agt ttc ttc tac ttt gtg aag att gcc aat ttc tcc tac	432
Ala Trp Leu Ser Phe Phe Tyr Phe Val Lys Ile Ala Asn Phe Ser Tyr	
130 135 140	
ccc ctt ttc ctc aaa ctg agg tgg aga att act gga ttg ata ccc tgg	480
Pro Leu Phe Leu Lys Leu Arg Trp Arg Ile Thr Gly Leu Ile Pro Trp	
145 150 155 160	
ctt ctg tgg ctg tcc gtg ttt att tcc ttc agt cac agc atg ttc tgc	528
Leu Leu Trp Leu Ser Val Phe Ile Ser Phe Ser His Ser Met Phe Cys	
165 170 175	
atc aac atc tgc act gtg tat tgt aac aat tct ttc cct atc cac tcc	576
Ile Asn Ile Cys Thr Val Tyr Cys Asn Asn Ser Phe Pro Ile His Ser	
180 185 190	
tcc aac tcc act aag aaa aca tac ttg tct gag atc aat gtg gtc ggt	624
Ser Asn Ser Thr Lys Lys Thr Tyr Leu Ser Glu Ile Asn Val Val Gly	
195 200 205	
ctg gct ttt ttc ttt aac ctg ggg att gtg act cct ctg atc atg ttc	672
Leu Ala Phe Phe Phe Asn Leu Gly Ile Val Thr Pro Leu Ile Met Phe	
210 215 220	
atc ctg aca gcc acc ctg ctg atc ctc tct ctc aag aga cac acc cta	720
Ile Leu Thr Ala Thr Leu Leu Ile Leu Ser Leu Lys Arg His Thr Leu	
225 230 235 240	
cac atg gga agc aat gcc aca ggg tcc aac gac ccc agc atg gag gct	768
His Met Gly Ser Asn Ala Thr Gly Ser Asn Asp Pro Ser Met Glu Ala	
245 250 255	
cac atg ggg gcc atc aaa gct atc agc tac ttt ctc att ctc tac att	816
His Met Gly Ala Ile Lys Ala Ile Ser Tyr Phe Leu Ile Leu Tyr Ile	
260 265 270	
ttc aat gca gtt gct ctg ttt atc tac ctg tcc aac atg ttt gac atc	864
Phe Asn Ala Val Ala Leu Phe Ile Tyr Leu Ser Asn Met Phe Asp Ile	

275	280	285	
aac agt ctg tgg aat aat ttg tgc cag atc atc atg gct gcc tac cct			912
Asn Ser Leu Trp Asn Asn Leu Cys Gln Ile Ile Met Ala Ala Tyr Pro			
290	295	300	
gcc agc cac tca att cta ctg att caa gat aac cct ggg ctg aga aga			960
Ala Ser His Ser Ile Leu Leu Ile Gln Asp Asn Pro Gly Leu Arg Arg			
305	310	315	320
gcc tgg aag cgg ctt cag ctt cga ctt cat ctt tac cca aaa gag tgg			1008
Ala Trp Lys Arg Leu Gln Leu Arg Leu His Leu Tyr Pro Lys Glu Trp			
325	330	335	
act ctg tga			
Thr Leu			1017
<210> 168			
<211> 338			
<212> PRT			
<213> homo sapiens			
<400> 168			
Met Leu Gly Arg Cys Phe Pro Pro Asp Thr Lys Glu Lys Gln Gln Leu			
1	5	10	15
Arg Met Thr Lys Leu Cys Asp Pro Ala Glu Ser Glu Leu Ser Pro Phe			
20	25	30	
Leu Ile Thr Leu Ile Leu Ala Val Leu Leu Ala Glu Tyr Leu Ile Gly			
35	40	45	
Ile Ile Ala Asn Gly Phe Ile Met Ala Ile His Ala Ala Glu Trp Val			
50	55	60	
Gln Asn Lys Ala Val Ser Thr Ser Gly Arg Ile Leu Val Phe Leu Ser			
65	70	75	80
Val Ser Arg Ile Ala Leu Gln Ser Leu Met Met Leu Glu Ile Thr Ile			
85	90	95	
Ser Ser Thr Ser Leu Ser Phe Tyr Ser Glu Asp Ala Val Tyr Tyr Ala			
100	105	110	
Phe Lys Ile Ser Phe Ile Phe Leu Asn Phe Cys Ser Leu Trp Phe Ala			
115	120	125	
Ala Trp Leu Ser Phe Phe Tyr Phe Val Lys Ile Ala Asn Phe Ser Tyr			
130	135	140	

Pro Leu Phe Leu Lys Leu Arg Trp Arg Ile Thr Gly Leu Ile Pro Trp  
 145 150 155 160

Leu Leu Trp Leu Ser Val Phe Ile Ser Phe Ser His Ser Met Phe Cys  
 165 170 175

Ile Asn Ile Cys Thr Val Tyr Cys Asn Asn Ser Phe Pro Ile His Ser  
 180 185 190

Ser Asn Ser Thr Lys Lys Thr Tyr Leu Ser Glu Ile Asn Val Val Gly  
 195 200 205

Leu Ala Phe Phe Phe Asn Leu Gly Ile Val Thr Pro Leu Ile Met Phe  
 210 215 220

Ile Leu Thr Ala Thr Leu Leu Ile Leu Ser Leu Lys Arg His Thr Leu  
 225 230 235 240

His Met Gly Ser Asn Ala Thr Gly Ser Asn Asp Pro Ser Met Glu Ala  
 245 250 255

His Met Gly Ala Ile Lys Ala Ile Ser Tyr Phe Leu Ile Leu Tyr Ile  
 260 265 270

Phe Asn Ala Val Ala Leu Phe Ile Tyr Leu Ser Asn Met Phe Asp Ile  
 275 280 285

Asn Ser Leu Trp Asn Asn Leu Cys Gln Ile Ile Met Ala Ala Tyr Pro  
 290 295 300

Ala Ser His Ser Ile Leu Leu Ile Gln Asp Asn Pro Gly Leu Arg Arg  
 305 310 315 320

Ala Trp Lys Arg Leu Gln Leu Arg Leu His Leu Tyr Pro Lys Glu Trp  
 325 330 335

Thr Leu

<210> 169  
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&lt;220&gt;

&lt;221&gt; variation

&lt;222&gt; (578)..(578)

&lt;223&gt; SNP

&lt;220&gt;

&lt;221&gt; variation

&lt;222&gt; (589)..(589)

&lt;223&gt; SNP

&lt;400&gt; 169

atg	cta	ggg	aga	tgt	ttt	cct	cca	gac	acc	aaa	gag	aag	caa	cag	ctc	48
Met	Leu	Gly	Arg	Cys	Phe	Pro	Pro	Asp	Thr	Lys	Glu	Lys	Gln	Gln	Leu	
1				5					10					15		

aga	atg	act	aaa	ctc	tgc	gat	cct	gca	gaa	agt	gaa	ttg	tcg	cca	ttt	96
Arg	Met	Thr	Lys	Leu	Cys	Asp	Pro	Ala	Glu	Ser	Glu	Leu	Ser	Pro	Phe	
			20					25				30				

ctc	atc	acc	tta	att	tta	gca	gtt	tta	ctt	gct	gaa	tac	ctc	att	ggt	144
Leu	Ile	Thr	Leu	Ile	Leu	Ala	Val	Leu	Leu	Ala	Glu	Tyr	Leu	Ile	Gly	
		35					40					45				

atc	att	gca	aat	ggt	ttc	atc	atg	gct	ata	cat	gca	gct	gaa	tgg	gtt	192
Ile	Ile	Ala	Asn	Gly	Phe	Ile	Met	Ala	Ile	His	Ala	Ala	Glu	Trp	Val	
	50					55					60					

caa	aat	aag	gca	gtt	tcc	aca	agt	ggc	agg	atc	ctg	gtt	ttc	ctg	agt	240
Gln	Asn	Lys	Ala	Val	Ser	Thr	Ser	Gly	Arg	Ile	Leu	Val	Phe	Leu	Ser	
65					70				75						80	

gta	tcc	aga	ata	gct	ctc	caa	agc	ctc	atg	atg	tta	gaa	att	acc	atc	288
Val	Ser	Arg	Ile	Ala	Leu	Gln	Ser	Leu	Met	Met	Leu	Glu	Ile	Thr	Ile	
				85					90					95		

agc	tca	acc	tcc	cta	agt	ttt	tat	tct	gaa	gac	gct	gta	tat	tat	gca	336
Ser	Ser	Thr	Ser	Leu	Ser	Phe	Tyr	Ser	Glu	Asp	Ala	Val	Tyr	Tyr	Ala	
			100					105					110			

ttc	aaa	ata	agt	ttt	ata	ttc	tta	aat	ttt	tgt	agc	ctg	tgg	ttt	gct	384
Phe	Lys	Ile	Ser	Phe	Ile	Phe	Leu	Asn	Phe	Cys	Ser	Leu	Trp	Phe	Ala	
		115					120					125				

gcc	tgg	ctc	agt	ttc	ttc	tac	ttt	gtg	aag	att	gcc	aat	ttc	tcc	tac	432
Ala	Trp	Leu	Ser	Phe	Phe	Tyr	Phe	Val	Lys	Ile	Ala	Asn	Phe	Ser	Tyr	
	130					135					140					

ccc	ctt	ttc	ctc	aaa	ctg	agg	tgg	aga	att	act	gga	ttg	ata	ccc	tgg	480
Pro	Leu	Phe	Leu	Lys	Leu	Arg	Trp	Arg	Ile	Thr	Gly	Leu	Ile	Pro	Trp	
145					150					155					160	

ctt	ctg	tgg	ctg	tcc	gtg	ttt	att	tcc	ttc	agt	cac	agc	atg	ttc	tgc	528
Leu	Leu	Trp	Leu	Ser	Val	Phe	Ile	Ser	Phe	Ser	His	Ser	Met	Phe	Cys	
				165					170						175	

atc	aac	atc	tgc	act	gtg	tat	tgt	aac	aat	tct	ttc	cct	atc	cac	tcc	576
Ile	Asn	Ile	Cys	Thr	Val	Tyr	Cys	Asn	Asn	Ser	Phe	Pro	Ile	His	Ser	
			180					185							190	

286/447

ttc aac tcc act gag aaa aca tac ttg tct gag atc aat gtg gtc ggt Phe Asn Ser Thr Glu Lys Thr Tyr Leu Ser Glu Ile Asn Val Val Gly 195 200 205	624
ctg gct ttt ttc ttt aac ctg ggg att gtg act cct ctg atc atg ttc Leu Ala Phe Phe Phe Asn Leu Gly Ile Val Thr Pro Leu Ile Met Phe 210 215 220	672
atc ctg aca gcc acc ctg ctg atc ctc tct ctc aag aga cac acc cta Ile Leu Thr Ala Thr Leu Leu Ile Leu Ser Leu Lys Arg His Thr Leu 225 230 235 240	720
cac atg gga agc aat gcc aca ggg tcc aac gac ccc agc atg gag gct His Met Gly Ser Asn Ala Thr Gly Ser Asn Asp Pro Ser Met Glu Ala 245 250 255	768
cac atg ggg gcc atc aaa gct atc agc tac ttt ctc att ctc tac att His Met Gly Ala Ile Lys Ala Ile Ser Tyr Phe Leu Ile Leu Tyr Ile 260 265 270	816
ttc aat gca gtt gct ctg ttt atc tac ctg tcc aac atg ttt gac atc Phe Asn Ala Val Ala Leu Phe Ile Tyr Leu Ser Asn Met Phe Asp Ile 275 280 285	864
aac agt ctg tgg aat aat ttg tgc cag atc atc atg gct gcc tac cct Asn Ser Leu Trp Asn Asn Leu Cys Gln Ile Ile Met Ala Ala Tyr Pro 290 295 300	912
gcc agc cac tca att cta ctg att caa gat aac cct ggg ctg aga aga Ala Ser His Ser Ile Leu Leu Ile Gln Asp Asn Pro Gly Leu Arg Arg 305 310 315 320	960
gcc tgg aag cgg ctt cag ctt cga ctt cat ctt tac cca aaa gag tgg Ala Trp Lys Arg Leu Gln Leu Arg Leu His Leu Tyr Pro Lys Glu Trp 325 330 335	1008
act ctg tga Thr Leu	1017

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<400> 170

Met Leu Gly Arg Cys Phe Pro Pro Asp Thr Lys Glu Lys Gln Gln Leu 1 5 10 15
Arg Met Thr Lys Leu Cys Asp Pro Ala Glu Ser Glu Leu Ser Pro Phe 20 25 30
Leu Ile Thr Leu Ile Leu Ala Val Leu Leu Ala Glu Tyr Leu Ile Gly 35 40 45
Ile Ile Ala Asn Gly Phe Ile Met Ala Ile His Ala Ala Glu Trp Val

50

55

60

Gln Asn Lys Ala Val Ser Thr Ser Gly Arg Ile Leu Val Phe Leu Ser  
 65 70 75 80

Val Ser Arg Ile Ala Leu Gln Ser Leu Met Met Leu Glu Ile Thr Ile  
 85 90 95

Ser Ser Thr Ser Leu Ser Phe Tyr Ser Glu Asp Ala Val Tyr Tyr Ala  
 100 105 110

Phe Lys Ile Ser Phe Ile Phe Leu Asn Phe Cys Ser Leu Trp Phe Ala  
 115 120 125

Ala Trp Leu Ser Phe Phe Tyr Phe Val Lys Ile Ala Asn Phe Ser Tyr  
 130 135 140

Pro Leu Phe Leu Lys Leu Arg Trp Arg Ile Thr Gly Leu Ile Pro Trp  
 145 150 155 160

Leu Leu Trp Leu Ser Val Phe Ile Ser Phe Ser His Ser Met Phe Cys  
 165 170 175

Ile Asn Ile Cys Thr Val Tyr Cys Asn Asn Ser Phe Pro Ile His Ser  
 180 185 190

Phe Asn Ser Thr Glu Lys Thr Tyr Leu Ser Glu Ile Asn Val Val Gly  
 195 200 205

Leu Ala Phe Phe Phe Asn Leu Gly Ile Val Thr Pro Leu Ile Met Phe  
 210 215 220

Ile Leu Thr Ala Thr Leu Leu Ile Leu Ser Leu Lys Arg His Thr Leu  
 225 230 235 240

His Met Gly Ser Asn Ala Thr Gly Ser Asn Asp Pro Ser Met Glu Ala  
 245 250 255

His Met Gly Ala Ile Lys Ala Ile Ser Tyr Phe Leu Ile Leu Tyr Ile  
 260 265 270

Phe Asn Ala Val Ala Leu Phe Ile Tyr Leu Ser Asn Met Phe Asp Ile  
 275 280 285

Asn Ser Leu Trp Asn Asn Leu Cys Gln Ile Ile Met Ala Ala Tyr Pro  
 290 295 300

Ala Ser His Ser Ile Leu Leu Ile Gln Asp Asn Pro Gly Leu Arg Arg  
 305 310 315 320

Ala Trp Lys Arg Leu Gln Leu Arg Leu His Leu Tyr Pro Lys Glu Trp  
 325 330 335

Thr Leu

<210> 171  
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 aag gtc acc ttc act ttg gtg gtc tcc gga ata gag tgc atc act ggc 96  
 Lys Val Thr Phe Thr Leu Val Val Ser Gly Ile Glu Cys Ile Thr Gly  
 20 25 30  
 atc ctt ggg agt ggc ttc atc acg gcc atc tat ggg gct gag tgg gcc 144  
 Ile Leu Gly Ser Gly Phe Ile Thr Ala Ile Tyr Gly Ala Glu Trp Ala  
 35 40 45  
 agg ggc aaa aca ctc ccc act ggt gac cgc att atg ttg atg ctg agc 192  
 Arg Gly Lys Thr Leu Pro Thr Gly Asp Arg Ile Met Leu Met Leu Ser  
 50 55 60  
 ttt tcc agg ctc ttg cta cag att tgg atg atg ctg gag aac att ttc 240  
 Phe Ser Arg Leu Leu Leu Gln Ile Trp Met Met Leu Glu Asn Ile Phe  
 65 70 75 80  
 agt ctg cta ttc cga att gtt tat aac caa aac tca gtg tat atc ctc 288

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[illegible]

<210> 172  
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 <212> PRT  
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<400> 172

Met Ala Thr Val Asn Thr Asp Ala Thr Asp Lys Asp Ile Ser Lys Phe  
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Lys Val Thr Phe Thr Leu Val Val Ser Gly Ile Glu Cys Ile Thr Gly  
 20 25 30

Ile Leu Gly Ser Gly Phe Ile Thr Ala Ile Tyr Gly Ala Glu Trp Ala  
 35 40 45

Arg Gly Lys Thr Leu Pro Thr Gly Asp Arg Ile Met Leu Met Leu Ser  
 50 55 60

Phe Ser Arg Leu Leu Leu Gln Ile Trp Met Met Leu Glu Asn Ile Phe  
 65 70 75 80

Ser Leu Leu Phe Arg Ile Val Tyr Asn Gln Asn Ser Val Tyr Ile Leu  
 85 90 95

Phe Lys Val Ile Thr Val Phe Leu Asn His Ser Asn Leu Trp Phe Ala  
 100 105 110

Ala Trp Leu Lys Val Phe Tyr Cys Leu Arg Ile Ala Asn Phe Asn His  
 115 120 125

Pro Leu Phe Phe Leu Met Lys Arg Lys Ile Ile Val Leu Met Pro Trp  
 130 135 140

Leu Leu Arg Leu Ser Val Leu Val Ser Leu Ser Phe Ser Phe Pro Leu  
 145 150 155 160

Ser Arg Asp Val Phe Asn Val Tyr Val Asn Ser Ser Ile Pro Ile Pro  
 165 170 175

Ser Ser Asn Ser Thr Glu Lys Lys Tyr Phe Ser Glu Thr Asn Met Val  
 180 185 190

Asn Leu Val Phe Phe Tyr Asn Met Gly Ile Phe Val Pro Leu Ile Met  
 195 200 205

Phe Ile Leu Ala Ala Thr Leu Leu Ile Leu Ser Leu Lys Arg His Thr  
 210 215 220

Leu His Met Gly Ser Asn Ala Thr Gly Ser Arg Asp Pro Ser Met Lys  
 225 230 235 240

Ala His Ile Gly Ala Ile Lys Ala Thr Ser Tyr Phe Leu Ile Leu Tyr  
 245 250 255

Ile Phe Asn Ala Ile Ala Leu Phe Leu Ser Thr Ser Asn Ile Phe Asp  
 260 265 270

Thr Tyr Ser Ser Trp Asn Ile Leu Cys Lys Ile Ile Met Ala Ala Tyr  
 275 280 285

Pro Ala Gly His Ser Val Gln Leu Ile Leu Gly Asn Pro Gly Leu Arg  
 290 295 300

Arg Ala Trp Lys Arg Phe Gln His Gln Val Pro Leu Tyr Leu Lys Gly  
 305 310 315 320

Gln Thr Leu

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 Met Ala Thr Val Asn Thr Asp Ala Thr Asp Lys Asp Ile Ser Lys Phe

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1	5	10	15	
aag gtc acc ttc act ttg gtg gtc tcc gga ata gag tgc atc act ggc Lys Val Thr Phe Thr Leu Val Val Ser Gly Ile Glu Cys Ile Thr Gly 20 25 30				96
atc ctt ggg agt ggc ttc atc acg gcc atc tat ggg gct gag tgg gcc Ile Leu Gly Ser Gly Phe Ile Thr Ala Ile Tyr Gly Ala Glu Trp Ala 35 40 45				144
agg ggc aaa aca ctc ccc act ggt gac cgc att atg ttg atg ctg agc Arg Gly Lys Thr Leu Pro Thr Gly Asp Arg Ile Met Leu Met Leu Ser 50 55 60				192
ttt tcc agg ctc ttg cta cag att tgg atg atg ctg gag aac att ttc Phe Ser Arg Leu Leu Leu Gln Ile Trp Met Met Leu Glu Asn Ile Phe 65 70 75 80				240
agt ctg cta ttc cga att gtt tat aac caa aac tca gtg tat atc ctc Ser Leu Leu Phe Arg Ile Val Tyr Asn Gln Asn Ser Val Tyr Ile Leu 85 90 95				288
ttc aaa gtc atc act gtc ttt ctg aac cat tcc aat ctc tgg ttt gct Phe Lys Val Ile Thr Val Phe Leu Asn His Ser Asn Leu Trp Phe Ala 100 105 110				336
gcc tgg ctc aaa gtc ttc tat tgt ctt aga att gca aac ttc aat cat Ala Trp Leu Lys Val Phe Tyr Cys Leu Arg Ile Ala Asn Phe Asn His 115 120 125				384
cct ttg ttc ttc ctg atg aag agg aaa atc ata gtg ctg atg cct tgg Pro Leu Phe Phe Leu Met Lys Arg Lys Ile Ile Val Leu Met Pro Trp 130 135 140				432
ctt ctc agg ctg tca gtg ttg gtt tcc tta agc ttc agc ttt cct ctc Leu Leu Arg Leu Ser Val Leu Val Ser Leu Ser Phe Ser Phe Pro Leu 145 150 155 160				480
tcg aga gat gtc ttc aat gtg tat gtg aat agc tcc att cct atc ccc Ser Arg Asp Val Phe Asn Val Tyr Val Asn Ser Ser Ile Pro Ile Pro 165 170 175				528
tcc tcc aac tcc acg gag aag aag tac ttc tct gag acc aat atg gtc Ser Ser Asn Ser Thr Glu Lys Lys Tyr Phe Ser Glu Thr Asn Met Val 180 185 190				576
aac ctg gta ttt ttc tat aac atg ggg atc ttc gtt cct ctg atc atg Asn Leu Val Phe Phe Tyr Asn Met Gly Ile Phe Val Pro Leu Ile Met 195 200 205				624
ttc atc ctg gca gcc acc ctg ctg atc ctc tct ctc aag aga cac acc Phe Ile Leu Ala Ala Thr Leu Leu Ile Leu Ser Leu Lys Arg His Thr 210 215 220				672
cta cac atg gga agc aat gcc aca ggg tcc agg gac ccc agc atg aag Leu His Met Gly Ser Asn Ala Thr Gly Ser Arg Asp Pro Ser Met Lys 225 230 235 240				720
gct cac ata ggg gcc atc aaa gcc acc agc tac ttt ctc atc ctc tac Ala His Ile Gly Ala Ile Lys Ala Thr Ser Tyr Phe Leu Ile Leu Tyr 245 250 255				768



Ala Trp Leu Lys Val Phe Tyr Cys Leu Arg Ile Ala Asn Phe Asn His  
115 120 125

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Pro Leu Phe Phe Leu Met Lys Arg Lys Ile Ile Val Leu Met Pro Trp  
 130 135 140  
 Leu Leu Arg Leu Ser Val Leu Val Ser Leu Ser Phe Ser Phe Pro Leu  
 145 150 155 160  
 Ser Arg Asp Val Phe Asn Val Tyr Val Asn Ser Ser Ile Pro Ile Pro  
 165 170 175  
 Ser Ser Asn Ser Thr Glu Lys Lys Tyr Phe Ser Glu Thr Asn Met Val  
 180 185 190  
 Asn Leu Val Phe Phe Tyr Asn Met Gly Ile Phe Val Pro Leu Ile Met  
 195 200 205  
 Phe Ile Leu Ala Ala Thr Leu Leu Ile Leu Ser Leu Lys Arg His Thr  
 210 215 220  
 Leu His Met Gly Ser Asn Ala Thr Gly Ser Arg Asp Pro Ser Met Lys  
 225 230 235 240  
 Ala His Ile Gly Ala Ile Lys Ala Thr Ser Tyr Phe Leu Ile Leu Tyr  
 245 250 255  
 Ile Phe Asn Ala Ile Ala Leu Phe Leu Ser Thr Ser Asn Ile Phe Asp  
 260 265 270  
 Thr Tyr Ser Ser Trp Asn Ile Leu Cys Lys Ile Ile Met Ala Ala Tyr  
 275 280 285  
 Pro Ala Ser His Ser Val Gln Leu Ile Leu Gly Asn Pro Gly Leu Arg  
 290 295 300  
 Arg Ala Trp Lys Arg Phe Gln His Gln Val Pro Leu Tyr Leu Lys Gly  
 305 310 315 320

Gln Thr Leu

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 aag gtc acc ttg act ttg gtg gtc tcc gga ata gag tgc atc act ggc 96  
 Lys Val Thr Phe Thr Leu Val Val Ser Gly Ile Glu Cys Ile Thr Gly  
 20 25 30  
 atc ctt ggg agt ggc ttc atc acg gcc atc tat ggg gct gag tgg gcc 144  
 Ile Leu Gly Ser Gly Phe Ile Thr Ala Ile Tyr Gly Ala Glu Trp Ala  
 35 40 45  
 agg ggc aaa aca ctc ccc act ggt gac cgc att atg ttg atg ctg agc 192  
 Arg Gly Lys Thr Leu Pro Thr Gly Asp Arg Ile Met Leu Met Leu Ser  
 50 55 60  
 ttt tcc agg ctc ttg cta cag att tgg atg atg ctg gag aac att ttc 240  
 Phe Ser Arg Leu Leu Leu Gln Ile Trp Met Met Leu Glu Asn Ile Phe  
 65 70 75 80  
 agt ctg cta ttc cga att gtt tat aac caa aac tca gtg tat atc ctc 288  
 Ser Leu Leu Phe Arg Ile Val Tyr Asn Gln Asn Ser Val Tyr Ile Leu  
 85 90 95  
 ttc aaa gtc atc act gtc ttt ctg aac cat tcc aat ctc tgg ttt gct 336  
 Phe Lys Val Ile Thr Val Phe Leu Asn His Ser Asn Leu Trp Phe Ala  
 100 105 110  
 gcc tgg ctc aaa gtc ttc tat tgt ctt aga att gca aac ttc aat cat 384  
 Ala Trp Leu Lys Val Phe Tyr Cys Leu Arg Ile Ala Asn Phe Asn His  
 115 120 125  
 cct ttg ttc ttc ctg atg aag agg aaa atc ata gtg ctg atg cct tgg 432  
 Pro Leu Phe Phe Leu Met Lys Arg Lys Ile Ile Val Leu Met Pro Trp  
 130 135 140  
 ctt ctc agg ctg tca gtg ttg gtt tcc tta agc ttc agc ttt cct ctc 480  
 Leu Leu Arg Leu Ser Val Leu Val Ser Leu Ser Phe Ser Phe Pro Leu  
 145 150 155 160  
 tcg aga gat gtc ttc aat gtg tat gtg aat agc tcc att cct atc ccc 528  
 Ser Arg Asp Val Phe Asn Val Tyr Val Asn Ser Ser Ile Pro Ile Pro  
 165 170 175

tcc tcc aac tcc acg gag aag aag tac ttc tct gag acc aat atg gtc Ser Ser Asn Ser Thr Glu Lys Lys Tyr Phe Ser Glu Thr Asn Met Val 180 185 190	576
aac ctg gta ttt ttc tat aac atg ggg atc ttc gtt cct ctg atc atg Asn Leu Val Phe Phe Tyr Asn Met Gly Ile Phe Val Pro Leu Ile Met 195 200 205	624
ttc atc ctg gca gcc acc ctg ctg atc ctc tct ctc aag aga cac acc Phe Ile Leu Ala Ala Thr Leu Ile Leu Ser Leu Lys Arg His Thr 210 215 220	672
cta cac atg gga agc aat gcc aca ggg tcc agg gac ccc agc atg aag Leu His Met Gly Ser Asn Ala Thr Gly Ser Arg Asp Pro Ser Met Lys 225 230 235 240	720
gct cac ata ggg gcc atc aaa gcc acc agc tac ttt ctc atc ctc tac Ala His Ile Gly Ala Ile Lys Ala Thr Ser Tyr Phe Leu Ile Leu Tyr 245 250 255	768
att ttc aat gca att gct cta ttt ctt tcc acg tcc aac atc ttt gac Ile Phe Asn Ala Ile Ala Leu Phe Leu Ser Thr Ser Asn Ile Phe Asp 260 265 270	816
gct tac agt tcc tgg aat att ttg tgc aag atc atc atg gct gcc tac Ala Tyr Ser Ser Trp Asn Ile Leu Cys Lys Ile Ile Met Ala Ala Tyr 275 280 285	864
cct gcc ggc cac tca gta caa ctg atc ttg ggc aac cct ggg ctg aga Pro Ala Gly His Ser Val Gln Leu Ile Leu Gly Asn Pro Gly Leu Arg 290 295 300	912
aga gcc tgg aag cgg ttt cag cac caa gtt cct ctt tac cta aaa ggg Arg Ala Trp Lys Arg Phe Gln His Gln Val Pro Leu Tyr Leu Lys Gly 305 310 315 320	960
cag act ctg tga Gln Thr Leu	972

<210> 176  
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 <212> PRT  
 <213> homo sapiens

<400> 176

Met Ala Thr Val Asn Thr Asp Ala Thr Asp Lys Asp Ile Ser Lys Phe  
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Lys Val Thr Phe Thr Leu Val Val Ser Gly Ile Glu Cys Ile Thr Gly  
 20 25 30

Ile Leu Gly Ser Gly Phe Ile Thr Ala Ile Tyr Gly Ala Glu Trp Ala  
 35 40 45

Arg Gly Lys Thr Leu Pro Thr Gly Asp Arg Ile Met Leu Met Leu Ser

50

55

60

Phe Ser Arg Leu Leu Leu Gln Ile Trp Met Met Leu Glu Asn Ile Phe  
 65 70 75 80

Ser Leu Leu Phe Arg Ile Val Tyr Asn Gln Asn Ser Val Tyr Ile Leu  
 85 90 95

Phe Lys Val Ile Thr Val Phe Leu Asn His Ser Asn Leu Trp Phe Ala  
 100 105 110

Ala Trp Leu Lys Val Phe Tyr Cys Leu Arg Ile Ala Asn Phe Asn His  
 115 120 125

Pro Leu Phe Phe Leu Met Lys Arg Lys Ile Ile Val Leu Met Pro Trp  
 130 135 140

Leu Leu Arg Leu Ser Val Leu Val Ser Leu Ser Phe Ser Phe Pro Leu  
 145 150 155 160

Ser Arg Asp Val Phe Asn Val Tyr Val Asn Ser Ser Ile Pro Ile Pro  
 165 170 175

Ser Ser Asn Ser Thr Glu Lys Lys Tyr Phe Ser Glu Thr Asn Met Val  
 180 185 190

Asn Leu Val Phe Phe Tyr Asn Met Gly Ile Phe Val Pro Leu Ile Met  
 195 200 205

Phe Ile Leu Ala Ala Thr Leu Leu Ile Leu Ser Leu Lys Arg His Thr  
 210 215 220

Leu His Met Gly Ser Asn Ala Thr Gly Ser Arg Asp Pro Ser Met Lys  
 225 230 235 240

Ala His Ile Gly Ala Ile Lys Ala Thr Ser Tyr Phe Leu Ile Leu Tyr  
 245 250 255

Ile Phe Asn Ala Ile Ala Leu Phe Leu Ser Thr Ser Asn Ile Phe Asp  
 260 265 270

Ala Tyr Ser Ser Trp Asn Ile Leu Cys Lys Ile Ile Met Ala Ala Tyr  
 275 280 285

Pro Ala Gly His Ser Val Gln Leu Ile Leu Gly Asn Pro Gly Leu Arg  
 290 295 300

Arg Ala Trp Lys Arg Phe Gln His Gln Val Pro Leu Tyr Leu Lys Gly  
 305 310 315 320

Gln Thr Leu

<210> 177  
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 Met Ala Thr Val Asn Thr Asp Ala Thr Asp Lys Asp Ile Ser Lys Phe  
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 aag gtc acc ttc act ttg gtg gtc tcc gga ata gag tgc atc act ggc 96  
 Lys Val Thr Phe Thr Leu Val Val Ser Gly Ile Glu Cys Ile Thr Gly  
 20 25 30  
 atc ctt ggg agt ggc ttc atc acg gcc atc tat ggg gct gag tgg gcc 144  
 Ile Leu Gly Ser Gly Phe Ile Thr Ala Ile Tyr Gly Ala Glu Trp Ala  
 35 40 45  
 agg ggc aaa aca ctc ccc act ggt gac cgc att atg ttg atg ctg agc 192  
 Arg Gly Lys Thr Leu Pro Thr Gly Asp Arg Ile Met Leu Met Leu Ser  
 50 55 60  
 ttt tcc agg ctc ttg cta cag att tgg atg atg ctg gag aac att ttc 240  
 Phe Ser Arg Leu Leu Leu Gln Ile Trp Met Met Leu Glu Asn Ile Phe  
 65 70 75 80  
 agt ctg cta ttc cga att gtt tat aac caa aac tca gtg tat atc ctc 288  
 Ser Leu Leu Phe Arg Ile Val Tyr Asn Gln Asn Ser Val Tyr Ile Leu  
 85 90 95  
 ttc aaa gtc atc act gtc ttt ctg aac cat tcc aat ctc tgg ttt gct 336

Phe	Lys	Val	Ile	Thr	Val	Phe	Leu	Asn	His	Ser	Asn	Leu	Trp	Phe	Ala	
			100					105					110			
gcc	tgg	ctc	aaa	gtc	ttc	tat	tgt	ctt	aga	att	gca	aac	ttc	aat	cat	384
Ala	Trp	Leu	Lys	Val	Phe	Tyr	Cys	Leu	Arg	Ile	Ala	Asn	Phe	Asn	His	
		115					120					125				
cct	ttg	ttc	ttc	ctg	atg	aag	agg	aaa	atc	ata	gtg	ctg	atg	cct	tgg	432
Pro	Leu	Phe	Phe	Leu	Met	Lys	Arg	Lys	Ile	Ile	Val	Leu	Met	Pro	Trp	
	130					135					140					
ctt	ctc	agg	ctg	tca	gtg	ttg	gtt	tcc	tta	agc	ttc	agc	ttt	cct	ctc	480
Leu	Leu	Arg	Leu	Ser	Val	Leu	Val	Ser	Leu	Ser	Phe	Ser	Phe	Pro	Leu	
145					150					155					160	
tcg	aga	gat	gtc	ttc	aat	gtg	tat	gtg	aat	agc	tcc	att	cct	atc	ccc	528
Ser	Arg	Asp	Val	Phe	Asn	Val	Tyr	Val	Asn	Ser	Ser	Ile	Pro	Ile	Pro	
				165					170					175		
tcc	tcc	aac	tcc	acg	gag	aag	aag	tac	ttc	tat	gag	acc	aat	atg	gtc	576
Ser	Ser	Asn	Ser	Thr	Glu	Lys	Lys	Tyr	Phe	Tyr	Glu	Thr	Asn	Met	Val	
			180					185					190			
aac	ctg	gta	ttt	ttc	tat	aac	atg	ggg	atc	ttc	gtt	cct	ctg	atc	atg	624
Asn	Leu	Val	Phe	Phe	Tyr	Asn	Met	Gly	Ile	Phe	Val	Pro	Leu	Ile	Met	
		195					200					205				
ttc	atc	ctg	gca	gcc	acc	ctg	ctg	atc	ctc	tct	ctc	aag	aga	cac	acc	672
Phe	Ile	Leu	Ala	Ala	Thr	Leu	Leu	Ile	Leu	Ser	Leu	Lys	Arg	His	Thr	
	210					215					220					
cta	cac	atg	gga	agc	aat	gcc	aca	ggg	tcc	agg	gac	ccc	agc	atg	aag	720
Leu	His	Met	Gly	Ser	Asn	Ala	Thr	Gly	Ser	Arg	Asp	Pro	Ser	Met	Lys	
225					230					235					240	
gct	cac	ata	ggg	gcc	atc	aaa	gcc	acc	agc	tac	ttt	ctc	atc	ctc	tac	768
Ala	His	Ile	Gly	Ala	Ile	Lys	Ala	Thr	Ser	Tyr	Phe	Leu	Ile	Leu	Tyr	
				245					250					255		
att	ttc	aat	gca	att	gct	cta	ttt	ctt	tcc	acg	tcc	aac	atc	ttt	gac	816
Ile	Phe	Asn	Ala	Ile	Ala	Leu	Phe	Leu	Ser	Thr	Ser	Asn	Ile	Phe	Asp	
			260					265					270			
act	tac	agt	tcc	tgg	aat	att	ttg	tgc	aag	atc	atc	atg	gct	gcc	tac	864
Thr	Tyr	Ser	Ser	Trp	Asn	Ile	Leu	Cys	Lys	Ile	Ile	Met	Ala	Ala	Tyr	
		275					280					285				
cct	gcc	ggc	cac	tca	gta	caa	ctg	atc	ttg	ggc	aac	cct	ggg	ctg	aga	912
Pro	Ala	Gly	His	Ser	Val	Gln	Leu	Ile	Leu	Gly	Asn	Pro	Gly	Leu	Arg	
		290				295					300					
aga	gcc	tgg	aag	cgg	ttt	cag	cac	caa	gtt	cct	ctt	tac	cta	aaa	ggg	960
Arg	Ala	Trp	Lys	Arg	Phe	Gln	His	Gln	Val	Pro	Leu	Tyr	Leu	Lys	Gly	
305					310					315					320	
cag	act	ctg	tga													972
Gln	Thr	Leu														

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<400> 178

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Ile Leu Gly Ser Gly Phe Ile Thr Ala Ile Tyr Gly Ala Glu Trp Ala  
 35 40 45

Arg Gly Lys Thr Leu Pro Thr Gly Asp Arg Ile Met Leu Met Leu Ser  
 50 55 60

Phe Ser Arg Leu Leu Leu Gln Ile Trp Met Met Leu Glu Asn Ile Phe  
 65 70 75 80

Ser Leu Leu Phe Arg Ile Val Tyr Asn Gln Asn Ser Val Tyr Ile Leu  
 85 90 95

Phe Lys Val Ile Thr Val Phe Leu Asn His Ser Asn Leu Trp Phe Ala  
 100 105 110

Ala Trp Leu Lys Val Phe Tyr Cys Leu Arg Ile Ala Asn Phe Asn His  
 115 120 125

Pro Leu Phe Phe Leu Met Lys Arg Lys Ile Ile Val Leu Met Pro Trp  
 130 135 140

Leu Leu Arg Leu Ser Val Leu Val Ser Leu Ser Phe Ser Phe Pro Leu  
 145 150 155 160

Ser Arg Asp Val Phe Asn Val Tyr Val Asn Ser Ser Ile Pro Ile Pro  
 165 170 175

Ser Ser Asn Ser Thr Glu Lys Lys Tyr Phe Tyr Glu Thr Asn Met Val  
 180 185 190

Asn Leu Val Phe Phe Tyr Asn Met Gly Ile Phe Val Pro Leu Ile Met  
 195 200 205

Phe Ile Leu Ala Ala Thr Leu Leu Ile Leu Ser Leu Lys Arg His Thr  
 210 215 220



Leu His Met Gly Ser Asn Ala Thr Gly Ser Arg Asp Pro Ser Met Lys  
 225 230 235 240

Ala His Ile Gly Ala Ile Lys Ala Thr Ser Tyr Phe Leu Ile Leu Tyr  
 245 250 255

Ile Phe Asn Ala Ile Ala Leu Phe Leu Ser Thr Ser Asn Ile Phe Asp  
 260 265 270

Thr Tyr Ser Ser Trp Asn Ile Leu Cys Lys Ile Ile Met Ala Ala Tyr  
 275 280 285

Pro Ala Gly His Ser Val Gln Leu Ile Leu Gly Asn Pro Gly Leu Arg  
 290 295 300

Arg Ala Trp Lys Arg Phe Gln His Gln Val Pro Leu Tyr Leu Lys Gly  
 305 310 315 320

Gln Thr Leu

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 aag gtc acc ttc act ttg gtg gtc tcc gga ata gag tgc atc act ggc  
 Lys Val Thr Phe Thr Leu Val Val Ser Gly Ile Glu Cys Ile Thr Gly 96

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atc ctt ggg agt ggc ttc atc acg gcc atc tat ggg gct gag tgg gcc Ile Leu Gly Ser Gly Phe Ile Thr Ala Ile Tyr Gly Ala Glu Trp Ala 35 40 45			144
agg ggc aaa aca ctc ccc act ggt gac cgc att atg ttg atg ctg agc Arg Gly Lys Thr Leu Pro Thr Gly Asp Arg Ile Met Leu Met Leu Ser 50 55 60			192
ttt tcc agg ctc ttg cta cag att tgg atg atg ctg gag aac att ttc Phe Ser Arg Leu Leu Leu Gln Ile Trp Met Met Leu Glu Asn Ile Phe 65 70 75 80			240
agt ctg cta ttc cga att gtt tat aac caa aac tca gtg tat atc ctc Ser Leu Leu Phe Arg Ile Val Tyr Asn Gln Asn Ser Val Tyr Ile Leu 85 90 95			288
ttc aaa gtc atc act gtc ttt ctg aac cat tcc aat ctc tgg ttt gct Phe Lys Val Ile Thr Val Phe Leu Asn His Ser Asn Leu Trp Phe Ala 100 105 110			336
gcc tgg ctc aaa gtc ttc tat tgt ctt aga att gca aac ttc aat cat Ala Trp Leu Lys Val Phe Tyr Cys Leu Arg Ile Ala Asn Phe Asn His 115 120 125			384
cct ttg ttc ttc ctg atg aag agg aaa atc ata gtg ctg atg cct tgg Pro Leu Phe Phe Leu Met Lys Arg Lys Ile Ile Val Leu Met Pro Trp 130 135 140			432
ctt ctc agg ctg tca gtg ttg gtt tcc tta agc ttc agc ttt cct ctc Leu Leu Arg Leu Ser Val Leu Val Ser Leu Ser Phe Ser Phe Pro Leu 145 150 155 160			480
tcg aga gat gtc ttc aat gtg tat gtg aat agc tcc att cct atc ccc Ser Arg Asp Val Phe Asn Val Tyr Val Asn Ser Ser Ile Pro Ile Pro 165 170 175			528
tcc tcc aac tcc acg gag aag aag tac ttc tat gag acc aat atg gtc Ser Ser Asn Ser Thr Glu Lys Lys Tyr Phe Tyr Glu Thr Asn Met Val 180 185 190			576
aac ctg gta ttt ttc tat aac atg ggg atc ttc gtt cct ctg atc atg Asn Leu Val Phe Phe Tyr Asn Met Gly Ile Phe Val Pro Leu Ile Met 195 200 205			624
ttc atc ctg gca gcc acc ctg ctg atc ctc tct ctc aag aga cac acc Phe Ile Leu Ala Ala Thr Leu Leu Ile Leu Ser Leu Lys Arg His Thr 210 215 220			672
cta cac atg gga agc aat gcc aca ggg tcc agg gac ccc agc atg aag Leu His Met Gly Ser Asn Ala Thr Gly Ser Arg Asp Pro Ser Met Lys 225 230 235 240			720
gct cac ata ggg gcc atc aaa gcc acc agc tac ttt ctc atc ctc tac Ala His Ile Gly Ala Ile Lys Ala Thr Ser Tyr Phe Leu Ile Leu Tyr 245 250 255			768
att ttc aat gca att gct cta ttt ctt tcc acg tcc aac atc ttt gac Ile Phe Asn Ala Ile Ala Leu Phe Leu Ser Thr Ser Asn Ile Phe Asp 260 265 270			816

gct tac agt tcc tgg aat att ttg tgc aag atc atc atg gct gcc tac 864  
 Ala Tyr Ser Ser Trp Asn Ile Leu Cys Lys Ile Ile Met Ala Ala Tyr  
                   275                                  280                                  285

cct gcc ggc cac tca gta caa ctg atc ttg ggc aac cct ggg ctg aga 912  
 Pro Ala Gly His Ser Val Gln Leu Ile Leu Gly Asn Pro Gly Leu Arg  
                   290                                  295                                  300

aga gcc tgg aag cgg ttt cag cac caa gtt cct ctt tac cta aaa ggg 960  
 Arg Ala Trp Lys Arg Phe Gln His Gln Val Pro Leu Tyr Leu Lys Gly  
                                   310                                  315                                  320

cag act ctg tga  
 Gln Thr Leu 972

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Met Ala Thr Val Asn Thr Asp Ala Thr Asp Lys Asp Ile Ser Lys Phe  
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Lys Val Thr Phe Thr Leu Val Val Ser Gly Ile Glu Cys Ile Thr Gly  
                   20                                  25                                  30

Ile Leu Gly Ser Gly Phe Ile Thr Ala Ile Tyr Gly Ala Glu Trp Ala  
                   35                                  40                                  45

Arg Gly Lys Thr Leu Pro Thr Gly Asp Arg Ile Met Leu Met Leu Ser  
                   50                                  55                                  60

Phe Ser Arg Leu Leu Leu Gln Ile Trp Met Met Leu Glu Asn Ile Phe  
 65                                  70                                  75                                  80

Ser Leu Leu Phe Arg Ile Val Tyr Asn Gln Asn Ser Val Tyr Ile Leu  
                   85                                  90                                  95

Phe Lys Val Ile Thr Val Phe Leu Asn His Ser Asn Leu Trp Phe Ala  
                   100                                  105                                  110

Ala Trp Leu Lys Val Phe Tyr Cys Leu Arg Ile Ala Asn Phe Asn His  
                   115                                  120                                  125

Pro Leu Phe Phe Leu Met Lys Arg Lys Ile Ile Val Leu Met Pro Trp  
                   130                                  135                                  140

Leu Leu Arg Leu Ser Val Leu Val Ser Leu Ser Phe Ser Phe Pro Leu  
 145 150 155 160

Ser Arg Asp Val Phe Asn Val Tyr Val Asn Ser Ser Ile Pro Ile Pro  
 165 170 175

Ser Ser Asn Ser Thr Glu Lys Lys Tyr Phe Tyr Glu Thr Asn Met Val  
 180 185 190

Asn Leu Val Phe Phe Tyr Asn Met Gly Ile Phe Val Pro Leu Ile Met  
 195 200 205

Phe Ile Leu Ala Ala Thr Leu Leu Ile Leu Ser Leu Lys Arg His Thr  
 210 215 220

Leu His Met Gly Ser Asn Ala Thr Gly Ser Arg Asp Pro Ser Met Lys  
 225 230 235 240

Ala His Ile Gly Ala Ile Lys Ala Thr Ser Tyr Phe Leu Ile Leu Tyr  
 245 250 255

Ile Phe Asn Ala Ile Ala Leu Phe Leu Ser Thr Ser Asn Ile Phe Asp  
 260 265 270

Ala Tyr Ser Ser Trp Asn Ile Leu Cys Lys Ile Ile Met Ala Ala Tyr  
 275 280 285

Pro Ala Gly His Ser Val Gln Leu Ile Leu Gly Asn Pro Gly Leu Arg  
 290 295 300

Arg Ala Trp Lys Arg Phe Gln His Gln Val Pro Leu Tyr Leu Lys Gly  
 305 310 315 320

Gln Thr Leu

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&lt;223&gt; SNP

&lt;400&gt; 181

atg	caa	gca	gca	ctg	acg	gcc	ttc	ttc	gtg	ttg	ctc	ttt	agc	ctg	ctg	48
Met	Gln	Ala	Ala	Leu	Thr	Ala	Phe	Phe	Val	Leu	Leu	Phe	Ser	Leu	Leu	
1				5					10					15		

agt	ctt	ctg	ggg	att	gca	gcg	aat	ggc	ttc	att	gtg	ctg	gtg	ctg	ggc	96
Ser	Leu	Leu	Gly	Ile	Ala	Ala	Asn	Gly	Phe	Ile	Val	Leu	Val	Leu	Gly	
			20					25					30			

agg	gag	tgg	ctg	cga	tat	ggc	agg	ttg	ctg	ccc	ttg	gat	atg	atc	ctc	144
Arg	Glu	Trp	Leu	Arg	Tyr	Gly	Arg	Leu	Leu	Pro	Leu	Asp	Met	Ile	Leu	
		35					40					45				

att	agc	ttg	ggt	gcc	tcc	cgc	ttc	tgc	ctg	cag	ttg	gtt	ggg	aca	gtg	192
Ile	Ser	Leu	Gly	Ala	Ser	Arg	Phe	Cys	Leu	Gln	Leu	Val	Gly	Thr	Val	
	50					55					60					

cac	aac	ttc	tac	tac	tct	gcc	cag	aag	gtc	gag	tac	tct	ggg	ggt	ctc	240
His	Asn	Phe	Tyr	Tyr	Ser	Ala	Gln	Lys	Val	Glu	Tyr	Ser	Gly	Gly	Leu	
65					70				75						80	

ggc	cga	cag	ttc	ttc	cat	cta	cac	tgg	cac	ttc	ctg	aac	tca	gcc	acc	288
Gly	Arg	Gln	Phe	Phe	His	Leu	His	Trp	His	Phe	Leu	Asn	Ser	Ala	Thr	
			85						90					95		

ttc	tgg	ttt	tgc	agc	tgg	ctc	agt	gtc	ctg	ttc	tgt	gtg	aag	att	gct	336
Phe	Trp	Phe	Cys	Ser	Trp	Leu	Ser	Val	Leu	Phe	Cys	Val	Lys	Ile	Ala	
			100					105					110			

aac	atc	aca	cac	tcc	acc	ttc	ctg	tgg	ctg	aag	tgg	agg	ttc	cca	ggg	384
Asn	Ile	Thr	His	Ser	Thr	Phe	Leu	Trp	Leu	Lys	Trp	Arg	Phe	Pro	Gly	
		115					120					125				

tgg	gtg	ccc	tgg	ctc	ctg	ttg	ggc	tct	gtc	ctg	atc	tcc	ttc	atc	ata	432
Trp	Val	Pro	Trp	Leu	Leu	Leu	Gly	Ser	Val	Leu	Ile	Ser	Phe	Ile	Ile	
	130					135					140					

acc	ctg	ctg	ttt	ttt	tgg	gtg	aac	tac	cct	gta	tat	caa	gaa	ttt	tta	480
Thr	Leu	Leu	Phe	Phe	Trp	Val	Asn	Tyr	Pro	Val	Tyr	Gln	Glu	Phe	Leu	
145					150				155						160	

att	aga	aaa	ttt	tct	ggg	aac	atg	acc	tac	aag	tgg	aat	aca	agg	ata	528
Ile	Arg	Lys	Phe	Ser	Gly	Asn	Met	Thr	Tyr	Lys	Trp	Asn	Thr	Arg	Ile	
			165						170					175		

gaa	aca	tac	tat	ttc	cca	tcc	ctg	aaa	ctg	gtc	atc	tgg	tca	att	cct	576
Glu	Thr	Tyr	Tyr	Phe	Pro	Ser	Leu	Lys	Leu	Val	Ile	Trp	Ser	Ile	Pro	
			180					185					190			

ttt	tct	gtt	ttt	ctg	gtc	tca	att	atg	ctg	tta	att	aat	tct	ctg	agg	624
Phe	Ser	Val	Phe	Leu	Val	Ser	Ile	Met	Leu	Leu	Ile	Asn	Ser	Leu	Arg	
		195					200					205				

agg	cat	act	cag	aga	atg	cag	cac	aac	ggg	cac	agc	ctg	cag	gac	ccc	672
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Arg	His	Thr	Gln	Arg	Met	Gln	His	Asn	Gly	His	Ser	Leu	Gln	Asp	Pro	
210						215					220					
agc	acc	cag	gct	cac	acc	aga	gct	ctg	aag	tcc	ctc	atc	tcc	ttc	ctc	720
Ser	Thr	Gln	Ala	His	Thr	Arg	Ala	Leu	Lys	Ser	Leu	Ile	Ser	Phe	Leu	
225					230				235						240	
att	ctt	tat	gct	ctg	tcc	ttt	ctg	tcc	ctg	atc	att	gat	gcc	gca	aaa	768
Ile	Leu	Tyr	Ala	Leu	Ser	Phe	Leu	Ser	Leu	Ile	Ile	Asp	Ala	Ala	Lys	
				245					250					255		
ttt	atc	tcc	atg	cag	aac	gac	ttt	tac	tgg	cca	tgg	caa	att	gca	gtc	816
Phe	Ile	Ser	Met	Gln	Asn	Asp	Phe	Tyr	Trp	Pro	Trp	Gln	Ile	Ala	Val	
			260					265					270			
tac	ctg	tgc	ata	tct	gtc	cat	ccc	ttc	atc	ctc	atc	ttc	agc	aac	ctc	864
Tyr	Leu	Cys	Ile	Ser	Val	His	Pro	Phe	Ile	Leu	Ile	Phe	Ser	Asn	Leu	
		275					280					285				
aag	ctt	cga	agc	gtg	ttc	tca	cag	ctc	ctg	ttg	ttg	gca	agg	ggc	ttc	912
Lys	Leu	Arg	Ser	Val	Phe	Ser	Gln	Leu	Leu	Leu	Leu	Ala	Arg	Gly	Phe	
	290					295					300					
tgg	gtg	gcc	tga													924
Trp	Val	Ala														
305																

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Met	Gln	Ala	Ala	Leu	Thr	Ala	Phe	Phe	Val	Leu	Leu	Phe	Ser	Leu	Leu	
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Ser	Leu	Leu	Gly	Ile	Ala	Ala	Asn	Gly	Phe	Ile	Val	Leu	Val	Leu	Gly	
			20					25					30			
Arg	Glu	Trp	Leu	Arg	Tyr	Gly	Arg	Leu	Leu	Pro	Leu	Asp	Met	Ile	Leu	
		35					40					45				
Ile	Ser	Leu	Gly	Ala	Ser	Arg	Phe	Cys	Leu	Gln	Leu	Val	Gly	Thr	Val	
	50					55					60					
His	Asn	Phe	Tyr	Tyr	Ser	Ala	Gln	Lys	Val	Glu	Tyr	Ser	Gly	Gly	Leu	
65					70					75					80	
Gly	Arg	Gln	Phe	Phe	His	Leu	His	Trp	His	Phe	Leu	Asn	Ser	Ala	Thr	
				85					90					95		
Phe	Trp	Phe	Cys	Ser	Trp	Leu	Ser	Val	Leu	Phe	Cys	Val	Lys	Ile	Ala	
			100					105							110	

Asn Ile Thr His Ser Thr Phe Leu Trp Leu Lys Trp Arg Phe Pro Gly  
 115 120 125

Trp Val Pro Trp Leu Leu Leu Gly Ser Val Leu Ile Ser Phe Ile Ile  
 130 135 140

Thr Leu Leu Phe Phe Trp Val Asn Tyr Pro Val Tyr Gln Glu Phe Leu  
 145 150 155 160

Ile Arg Lys Phe Ser Gly Asn Met Thr Tyr Lys Trp Asn Thr Arg Ile  
 165 170 175

Glu Thr Tyr Tyr Phe Pro Ser Leu Lys Leu Val Ile Trp Ser Ile Pro  
 180 185 190

Phe Ser Val Phe Leu Val Ser Ile Met Leu Leu Ile Asn Ser Leu Arg  
 195 200 205

Arg His Thr Gln Arg Met Gln His Asn Gly His Ser Leu Gln Asp Pro  
 210 215 220

Ser Thr Gln Ala His Thr Arg Ala Leu Lys Ser Leu Ile Ser Phe Leu  
 225 230 235 240

Ile Leu Tyr Ala Leu Ser Phe Leu Ser Leu Ile Ile Asp Ala Ala Lys  
 245 250 255

Phe Ile Ser Met Gln Asn Asp Phe Tyr Trp Pro Trp Gln Ile Ala Val  
 260 265 270

Tyr Leu Cys Ile Ser Val His Pro Phe Ile Leu Ile Phe Ser Asn Leu  
 275 280 285

Lys Leu Arg Ser Val Phe Ser Gln Leu Leu Leu Leu Ala Arg Gly Phe  
 290 295 300

Trp Val Ala  
 305

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 1 5 10 15  
 agt ctt ctg ggg att gca gcg aat ggc ttc att gtg ctg gtg ctg ggc 96  
 Ser Leu Leu Gly Ile Ala Ala Asn Gly Phe Ile Val Leu Val Leu Gly  
 20 25 30  
 agg gag tgg ctg cga tat ggc agg ttg ctg ccc ttg gat atg atc ctc 144  
 Arg Glu Trp Leu Arg Tyr Gly Arg Leu Leu Pro Leu Asp Met Ile Leu  
 35 40 45  
 att agc ttg ggt gcc tcc cgc ttc tgc ctg cag ttg gtt ggg aca gtg 192  
 Ile Ser Leu Gly Ala Ser Arg Phe Cys Leu Gln Leu Val Gly Thr Val  
 50 55 60  
 cac aac ttc tac tac tct gcc cag aag gtc gag tac tct ggg ggt ctc 240  
 His Asn Phe Tyr Tyr Ser Ala Gln Lys Val Glu Tyr Ser Gly Gly Leu  
 65 70 75 80  
 ggc cga cag ttc ttc cat cta cac tgg cac ttc ctg aac tca gcc acc 288  
 Gly Arg Gln Phe Phe His Leu His Trp His Phe Leu Asn Ser Ala Thr  
 85 90 95  
 ttc tgg ttt tgc agc tgg ctc agt gtc ctg ttc tgt gtg aag att gct 336  
 Phe Trp Phe Cys Ser Trp Leu Ser Val Leu Phe Cys Val Lys Ile Ala  
 100 105 110  
 aac atc aca cac tcc acc ttc ctg tgg ctg aag tgg agg ttc cca ggg 384  
 Asn Ile Thr His Ser Thr Phe Leu Trp Leu Lys Trp Arg Phe Pro Gly  
 115 120 125  
 tgg gtg ccc tgg ctc ctg ttg ggc tct gtc ctg atc tcc ttc atc ata 432  
 Trp Val Pro Trp Leu Leu Leu Gly Ser Val Leu Ile Ser Phe Ile Ile  
 130 135 140  
 acc ctg ctg ttt ttt tgg gtg aac tac cct gta tat caa gaa ttt tta 480  
 Thr Leu Leu Phe Phe Trp Val Asn Tyr Pro Val Tyr Gln Glu Phe Leu  
 145 150 155 160  
 att aga aaa ttt tct ggg aac atg acc tac aag tgg aat aca agg ata 528  
 Ile Arg Lys Phe Ser Gly Asn Met Thr Tyr Lys Trp Asn Thr Arg Ile  
 165 170 175  
 gaa aca tac tat ttc cca tcc ctg aaa ctg gtc atc tgg tca att cct 576  
 Glu Thr Tyr Tyr Phe Pro Ser Leu Lys Leu Val Ile Trp Ser Ile Pro  
 180 185 190



ttt tct gat ttt ctg gtc tca att atg ctg tta att aat tct ctg agg 624  
 Phe Ser Asp Phe Leu Val Ser Ile Met Leu Leu Ile Asn Ser Leu Arg  
 195 200 205  
 agg cat act cag aga atg cag cac aac ggg cac agc ctg cag gac ccc 672  
 Arg His Thr Gln Arg Met Gln His Asn Gly His Ser Leu Gln Asp Pro  
 210 215 220  
 agc acc cag gct cac acc aga gct ctg aag tcc ctc atc tcc ttc ctc 720  
 Ser Thr Gln Ala His Thr Arg Ala Leu Lys Ser Leu Ile Ser Phe Leu  
 225 230 235 240  
 att ctt tat gct ctg tcc ttt ctg tcc ctg atc att gat gcc gca aaa 768  
 Ile Leu Tyr Ala Leu Ser Phe Leu Ser Leu Ile Ile Asp Ala Ala Lys  
 245 250 255  
 ttt atc tcc atg cag aac gac ttt tac tgg cca tgg caa att gca gtc 816  
 Phe Ile Ser Met Gln Asn Asp Phe Tyr Trp Pro Trp Gln Ile Ala Val  
 260 265 270  
 tac ctg tgc ata tct gtc cat ccc ttc atc ctc atc ttc agc aac ctc 864  
 Tyr Leu Cys Ile Ser Val His Pro Phe Ile Leu Ile Phe Ser Asn Leu  
 275 280 285  
 aag ctt cga agc gtg ttc tca cag ctc ctg ttg ttg gca agg ggc ttc 912  
 Lys Leu Arg Ser Val Phe Ser Gln Leu Leu Leu Leu Ala Arg Gly Phe  
 290 295 300  
 tgg gtg gcc tga 924  
 Trp Val Ala  
 305

<210> 184  
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<400> 184

Met Gln Ala Ala Leu Thr Ala Phe Phe Val Leu Leu Phe Ser Leu Leu  
 1 5 10 15  
 Ser Leu Leu Gly Ile Ala Ala Asn Gly Phe Ile Val Leu Val Leu Gly  
 20 25 30  
 Arg Glu Trp Leu Arg Tyr Gly Arg Leu Leu Pro Leu Asp Met Ile Leu  
 35 40 45  
 Ile Ser Leu Gly Ala Ser Arg Phe Cys Leu Gln Leu Val Gly Thr Val  
 50 55 60  
 His Asn Phe Tyr Tyr Ser Ala Gln Lys Val Glu Tyr Ser Gly Gly Leu  
 65 70 75 80

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 1 5 10 15

agt ctt ctg ggg att gca gcg aat ggc ttc att gtg ctg gtg ctg ggc 96  
 Ser Leu Leu Gly Ile Ala Ala Asn Gly Phe Ile Val Leu Val Leu Gly  
 20 25 30

agg gag tgg ctg cga tat ggc agg ttg ctg ccc ttg gat atg atc ctc 144  
 Arg Glu Trp Leu Arg Tyr Gly Arg Leu Leu Pro Leu Asp Met Ile Leu  
 35 40 45

att agc ttg ggt gcc tcc cgc ttc tgc ctg cag ttg gtt ggg aca gtg 192  
 Ile Ser Leu Gly Ala Ser Arg Phe Cys Leu Gln Leu Val Gly Thr Val  
 50 55 60

cac aac ttc tac tac tct gcc cag aag gtc gag tac tct ggg ggt ctc 240  
 His Asn Phe Tyr Tyr Ser Ala Gln Lys Val Glu Tyr Ser Gly Gly Leu  
 65 70 75 80

ggc cga cag ttc ttc cat cta cac tgg cac ttc ctg aac tca gcc acc 288  
 Gly Arg Gln Phe Phe His Leu His Trp His Phe Leu Asn Ser Ala Thr  
 85 90 95

ttc tgg ttt tgc agc tgg ctc agt gtc ctg ttc tgt gtg aag att gct 336  
 Phe Trp Phe Cys Ser Trp Leu Ser Val Leu Phe Cys Val Lys Ile Ala  
 100 105 110

aac atc aca cac tcc acc ttc ctg tgg ctg aag tgg agg ttc cta ggg 384  
 Asn Ile Thr His Ser Thr Phe Leu Trp Leu Lys Trp Arg Phe Leu Gly  
 115 120 125

tgg gtg ccc tgg ctc ctg ttg ggc tct gtc ctg atc tcc ttc atc ata 432  
 Trp Val Pro Trp Leu Leu Leu Gly Ser Val Leu Ile Ser Phe Ile Ile  
 130 135 140

acc ctg ctg ttt ttt tgg gtg aac tac cct gta tat caa gaa ttt tta 480  
 Thr Leu Leu Phe Phe Trp Val Asn Tyr Pro Val Tyr Gln Glu Phe Leu  
 145 150 155 160

att aga aaa ttt tct ggg aac atg acc tac aag tgg aat aca agg ata 528

Ile Arg Lys Phe Ser Gly Asn Met Thr Tyr Lys Trp Asn Thr Arg Ile  
 165 170 175

gaa aca tac tat ttc cca tcc ctg aaa ctg gtc atc tgg tca att cct 576  
 Glu Thr Tyr Tyr Phe Pro Ser Leu Lys Leu Val Ile Trp Ser Ile Pro  
 180 185 190

ttt tct gtt ttt ctg gtc tca att atg ctg tta att aat tct ctg agg 624  
 Phe Ser Val Phe Leu Val Ser Ile Met Leu Leu Ile Asn Ser Leu Arg  
 195 200 205

agg cat act cag aga atg cag cac aac ggg cac agc ctg cag gac ccc 672  
 Arg His Thr Gln Arg Met Gln His Asn Gly His Ser Leu Gln Asp Pro  
 210 215 220

agc acc cag gct cac acc aga gct ctg aag tcc ctc atc tcc ttc ctc 720  
 Ser Thr Gln Ala His Thr Arg Ala Leu Lys Ser Leu Ile Ser Phe Leu  
 225 230 235 240

att ctt tat gct ctg tcc ttt ctg tcc ctg atc att gat gcc gca aaa 768  
 Ile Leu Tyr Ala Leu Ser Phe Leu Ser Leu Ile Ile Asp Ala Ala Lys  
 245 250 255

ttt atc tcc atg cag aac gac ttt tac tgg cca tgg caa att gca gtc 816  
 Phe Ile Ser Met Gln Asn Asp Phe Tyr Trp Pro Trp Gln Ile Ala Val  
 260 265 270

tac ctg tgc ata tct gtc cat ccc ttc atc ctc atc ttc agc aac ctc 864  
 Tyr Leu Cys Ile Ser Val His Pro Phe Ile Leu Ile Phe Ser Asn Leu  
 275 280 285

aag ctt cga agc gtg ttc tca cag ctc ctg ttg ttg gca agg ggc ttc 912  
 Lys Leu Arg Ser Val Phe Ser Gln Leu Leu Leu Leu Ala Arg Gly Phe  
 290 295 300

tgg gtg gcc tga  
 Trp Val Ala 924  
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<210> 186  
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<400> 186

Met Gln Ala Ala Leu Thr Ala Phe Phe Val Leu Leu Phe Ser Leu Leu  
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Ser Leu Leu Gly Ile Ala Ala Asn Gly Phe Ile Val Leu Val Leu Gly  
 20 25 30

Arg Glu Trp Leu Arg Tyr Gly Arg Leu Leu Pro Leu Asp Met Ile Leu  
 35 40 45

Ile Ser Leu Gly Ala Ser Arg Phe Cys Leu Gln Leu Val Gly Thr Val  
 50 55 60

His Asn Phe Tyr Tyr Ser Ala Gln Lys Val Glu Tyr Ser Gly Gly Leu  
 65 70 75 80  
 Gly Arg Gln Phe Phe His Leu His Trp His Phe Leu Asn Ser Ala Thr  
 85 90 95  
 Phe Trp Phe Cys Ser Trp Leu Ser Val Leu Phe Cys Val Lys Ile Ala  
 100 105 110  
 Asn Ile Thr His Ser Thr Phe Leu Trp Leu Lys Trp Arg Phe Leu Gly  
 115 120 125  
 Trp Val Pro Trp Leu Leu Leu Gly Ser Val Leu Ile Ser Phe Ile Ile  
 130 135 140  
 Thr Leu Leu Phe Phe Trp Val Asn Tyr Pro Val Tyr Gln Glu Phe Leu  
 145 150 155 160  
 Ile Arg Lys Phe Ser Gly Asn Met Thr Tyr Lys Trp Asn Thr Arg Ile  
 165 170 175  
 Glu Thr Tyr Tyr Phe Pro Ser Leu Lys Leu Val Ile Trp Ser Ile Pro  
 180 185 190  
 Phe Ser Val Phe Leu Val Ser Ile Met Leu Leu Ile Asn Ser Leu Arg  
 195 200 205  
 Arg His Thr Gln Arg Met Gln His Asn Gly His Ser Leu Gln Asp Pro  
 210 215 220  
 Ser Thr Gln Ala His Thr Arg Ala Leu Lys Ser Leu Ile Ser Phe Leu  
 225 230 235 240  
 Ile Leu Tyr Ala Leu Ser Phe Leu Ser Leu Ile Ile Asp Ala Ala Lys  
 245 250 255  
 Phe Ile Ser Met Gln Asn Asp Phe Tyr Trp Pro Trp Gln Ile Ala Val  
 260 265 270  
 Tyr Leu Cys Ile Ser Val His Pro Phe Ile Leu Ile Phe Ser Asn Leu  
 275 280 285  
 Lys Leu Arg Ser Val Phe Ser Gln Leu Leu Leu Leu Ala Arg Gly Phe  
 290 295 300

Trp Val Ala  
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ttt gtt att gga aat ttt gct aat ggc ttc ata gca ttg gta aat tcc Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser 20 25 30 96
att gag tgg gtc aag aga caa aag atc tct ttt gct gac cag att ctc Ile Glu Trp Val Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu 35 40 45 144
act gct ctg gcg gtc tcc aga gtt ggt ttg ctc tgg gta tta tta tta Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu 50 55 60 192
aat tgg tat tca act gtg ttt aat cca gct ttt tat agt gta gaa gta Asn Trp Tyr Ser Thr Val Phe Asn Pro Ala Phe Tyr Ser Val Glu Val 65 70 75 80 240
aga act act gct tat aat gtc tgg gca gta acc ggc cat ttc agc aac Arg Thr Thr Ala Tyr Asn Val Trp Ala Val Thr Gly His Phe Ser Asn 85 90 95 288
tgg ctt gct act agc ctc agc ata ttt tat ttg ctc aag att gcc aat Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn 100 105 110 336
ttc tcc aac ctt att ttt ctt cac tta aag agg aga gtt aag agt gtc Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val 115 120 125 384
att ctg gtg atg ctg ttg ggg cct tta cta ttt ttg gct tgt caa ctt Ile Leu Val Met Leu Leu Gly Pro Leu Leu Phe Leu Ala Cys Gln Leu 130 135 140 432
ttt gtg ata aac atg aaa gag att gta cgg aca aaa gaa tat gaa gga Phe Val Ile Asn Met Lys Glu Ile Val Arg Thr Lys Glu Tyr Glu Gly 145 150 155 160 480
aac atg act tgg aag atc aaa ttg agg agt gca gtg tac ctt tca gat Asn Met Thr Trp Lys Ile Lys Leu Arg Ser Ala Val Tyr Leu Ser Asp 165 170 175 528
gcg act gta acc acg cta gga aac tta gtg ccc ttc act ctg acc ctg Ala Thr Val Thr Thr Leu Gly Asn Leu Val Pro Phe Thr Leu Thr Leu 180 185 190 576
cta tgt ttt ttg ctg tta atc tgt tct ctg tgt aaa cat ctc aag aag Leu Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys 195 200 205 624
atg cag ctc cat ggt aaa gga tct caa gat ccc agc acc aag gtc cac Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His 210 215 220 672
ata aaa gtt ttg caa act gtg atc ttt ttc ctc ttg tta tgt gcc att Ile Lys Val Leu Gln Thr Val Ile Phe Phe Leu Leu Leu Cys Ala Ile 225 230 235 240 720
tac ttt ctg tcc ata atg ata tca gtt tgg agt ttt ggg agt ctg gaa 768

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Tyr Phe Leu Ser Ile Met Ile Ser Val Trp Ser Phe Gly Ser Leu Glu  
 245 250 255  
 aac aaa cct gtc ttc atg ttc tgc aaa gct att aga ttc agc tat cct 816  
 Asn Lys Pro Val Phe Met Phe Cys Lys Ala Ile Arg Phe Ser Tyr Pro  
 260 265 270  
 tca atc cac cca ttc atc ctg att tgg gga aac aag aag cta aag cag 864  
 Ser Ile His Pro Phe Ile Leu Ile Trp Gly Asn Lys Lys Leu Lys Gln  
 275 280 285  
 act ttt ctt tca gtt ttg cgg caa gtg agg tac tgg gtg aaa gga gag 912  
 Thr Phe Leu Ser Val Leu Arg Gln Val Arg Tyr Trp Val Lys Gly Glu  
 290 295 300  
 aag cct tca tct cca tga  
 Lys Pro Ser Ser Pro 930  
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 <211> 309  
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Met Thr Thr Phe Ile Pro Ile Ile Phe Ser Ser Val Val Val Val Leu  
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 Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser  
 20 25 30  
 Ile Glu Trp Val Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu  
 35 40 45  
 Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu  
 50 55 60  
 Asn Trp Tyr Ser Thr Val Phe Asn Pro Ala Phe Tyr Ser Val Glu Val  
 65 70 75 80  
 Arg Thr Thr Ala Tyr Asn Val Trp Ala Val Thr Gly His Phe Ser Asn  
 85 90 95  
 Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn  
 100 105 110  
 Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val  
 115 120 125  
 Ile Leu Val Met Leu Leu Gly Pro Leu Leu Phe Leu Ala Cys Gln Leu  
 130 135 140



Phe Val Ile Asn Met Lys Glu Ile Val Arg Thr Lys Glu Tyr Glu Gly  
 145 150 155 160

Asn Met Thr Trp Lys Ile Lys Leu Arg Ser Ala Val Tyr Leu Ser Asp  
 165 170 175

Ala Thr Val Thr Thr Leu Gly Asn Leu Val Pro Phe Thr Leu Thr Leu  
 180 185 190

Leu Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His  
 210 215 220

Ile Lys Val Leu Gln Thr Val Ile Phe Phe Leu Leu Leu Cys Ala Ile  
 225 230 235 240

Tyr Phe Leu Ser Ile Met Ile Ser Val Trp Ser Phe Gly Ser Leu Glu  
 245 250 255

Asn Lys Pro Val Phe Met Phe Cys Lys Ala Ile Arg Phe Ser Tyr Pro  
 260 265 270

Ser Ile His Pro Phe Ile Leu Ile Trp Gly Asn Lys Lys Leu Lys Gln  
 275 280 285

Thr Phe Leu Ser Val Leu Arg Gln Val Arg Tyr Trp Val Lys Gly Glu  
 290 295 300

Lys Pro Ser Ser Pro  
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Met Thr Thr Phe Ile Pro Ile Ile Phe Ser Ser Val Val Val Val Leu		
1 5 10 15		
ttt gtt att gga aat ttt gct aat ggc ttc ata gca ttg gta aat tcc		96
Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser		
20 25 30		
att gag tgg gtc aag aga caa aag atc tct ttt gct gac cag att ctc		144
Ile Glu Trp Val Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu		
35 40 45		
act gct ctg gcg gtc tcc aga gtt ggt ttg ctc tgg gta tta tta tta		192
Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu		
50 55 60		
aat tgg tat tca act gtg ttt aat cca gct ttt tat agt gta gaa gta		240
Asn Trp Tyr Ser Thr Val Phe Asn Pro Ala Phe Tyr Ser Val Glu Val		
65 70 75 80		

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[illegible]

<210> 190  
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Met Thr Thr Phe Ile Pro Ile Ile Phe Ser Ser Val Val Val Val Leu  
 1 5 10 15

Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser  
 20 25 30

Ile Glu Trp Val Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu  
 35 40 45

Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu  
 50 55 60

Asn Trp Tyr Ser Thr Val Phe Asn Pro Ala Phe Tyr Ser Val Glu Val  
 65 70 75 80

Arg Thr Thr Ala Tyr Asn Val Trp Ala Val Thr Gly His Phe Ser Asn  
 85 90 95

Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn  
 100 105 110

Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val  
 115 120 125

Ile Leu Val Met Leu Leu Gly Pro Leu Leu Phe Leu Ala Cys Gln Leu  
 130 135 140

Phe Val Ile Asn Met Lys Glu Ile Val Arg Thr Lys Glu Tyr Glu Gly  
 145 150 155 160

Asn Met Thr Trp Lys Ile Lys Leu Arg Ser Ala Val Tyr Leu Ser Asp  
 165 170 175

Ala Thr Val Thr Thr Leu Gly Asn Leu Val Pro Phe Thr Leu Thr Leu  
 180 185 190

Leu Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

Met Gln Leu His Gly Lys Gly Ser Glu Asp Pro Ser Thr Lys Val His  
 210 215 220

Ile Lys Val Leu Gln Thr Val Ile Phe Phe Leu Leu Leu Cys Ala Ile  
225 230 235 240

Tyr Phe Leu Ser Ile Met Ile Ser Val Trp Ser Phe Gly Ser Leu Glu  
245 250 255

Asn Lys Pro Val Phe Met Phe Cys Lys Ala Ile Arg Phe Ser Tyr Pro  
260 265 270

Ser Ile His Arg Phe Ile Leu Ile Trp Gly Asn Lys Lys Leu Lys Gln  
275 280 285

Thr Phe Leu Ser Val Leu Arg Gln Val Arg Tyr Trp Val Lys Gly Glu  
290 295 300

Lys Pro Ser Ser Pro  
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atg aca act ttt ata ccc atc att ttt tcc agt gtg gta gtg gtt cta	48
Met Thr Thr Phe Ile Pro Ile Ile Phe Ser Ser Val Val Val Val Leu	
1 5 10 15	
ttt gtt att gga aat ttt gct aat ggc ttc ata gca ttg gta aat tcc	96
Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser	
20 25 30	
att gag cgg gtc aag aga caa aag atc tct ttt gct gac cag att ctc	144
Ile Glu Arg Val Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu	
35 40 45	
act gct ctg gcg gtc tcc aga gtt ggt ttg ctc tgg gta tta tta tta	192
Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu	
50 55 60	
aat tgg tat tca act gtg ttt aat cca gct ttt tat agt gta gaa gta	240
Asn Trp Tyr Ser Thr Val Phe Asn Pro Ala Phe Tyr Ser Val Glu Val	
65 70 75 80	
aga act act gct tat aat gtc tgg gca gta acc ggc cat ttc agc aac	288
Arg Thr Thr Ala Tyr Asn Val Trp Ala Val Thr Gly His Phe Ser Asn	
85 90 95	
tgg ctt gct act agc ctc agc ata ttt tat ttg ctc aag att gcc aat	336
Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn	
100 105 110	
ttc tcc aac ctt att ttt ctt cac tta aag agg aga gtt aag agt gtc	384
Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val	
115 120 125	
att ctg gtg atg ctg ttg ggg cct tta cta ttt ttg gct tgt caa ctt	432
Ile Leu Val Met Leu Leu Gly Pro Leu Leu Phe Leu Ala Cys Gln Leu	
130 135 140	
ttt gtg ata aac atg aaa gag att gta cgg aca aaa gaa tat gaa gga	480
Phe Val Ile Asn Met Lys Glu Ile Val Arg Thr Lys Glu Tyr Glu Gly	
145 150 155 160	

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aac atg act tgg aag atc aaa ttg agg agt gca gtg tac ctt tca gat 528  
 Asn Met Thr Trp Lys Ile Lys Leu Arg Ser Ala Val Tyr Leu Ser Asp  
 165 170 175

gcg act gta acc acg cta gga aac tta gtg ccc ttc act ctg acc ctg 576  
 Ala Thr Val Thr Thr Leu Gly Asn Leu Val Pro Phe Thr Leu Thr Leu  
 180 185 190

cta tgt ttt ttg ctg tta atc tgt tct ctg tgt aaa cat ctc aag aag 624  
 Leu Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

atg cag ctc cat ggt aaa gga tct caa gat ccc agc acc aag gtc cac 672  
 Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His  
 210 215 220

ata aaa gtt ttg caa act gtg atc ttt ttc ctc ttg tta tgt gcc gtt 720  
 Ile Lys Val Leu Gln Thr Val Ile Phe Phe Leu Leu Leu Cys Ala Val  
 225 230 235 240

tac ttt ctg tcc ata atg ata tca gtt tgg agt ttt ggg agt ctg gaa 768  
 Tyr Phe Leu Ser Ile Met Ile Ser Val Trp Ser Phe Gly Ser Leu Glu  
 245 250 255

aac aaa cct gtc ttc atg ttc tgc aaa gct att aga ttc agc tat cct 816  
 Asn Lys Pro Val Phe Met Phe Cys Lys Ala Ile Arg Phe Ser Tyr Pro  
 260 265 270

tca atc cac cca ttc atc ctg att tgt gga aac aag aag cta aag cag 864  
 Ser Ile His Pro Phe Ile Leu Ile Cys Gly Asn Lys Lys Leu Lys Gln  
 275 280 285

act ttt ctt tca gtt ttg cgg caa gtg agg tac tgg gtg aaa gga gag 912  
 Thr Phe Leu Ser Val Leu Arg Gln Val Arg Tyr Trp Val Lys Gly Glu  
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aag cct tca tct cca tga 930  
 Lys Pro Ser Ser Pro  
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Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser  
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Ile Glu Arg Val Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu  
35 40 45

Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu

50

55

60

Asn Trp Tyr Ser Thr Val Phe Asn Pro Ala Phe Tyr Ser Val Glu Val  
 65 70 75 80

Arg Thr Thr Ala Tyr Asn Val Trp Ala Val Thr Gly His Phe Ser Asn  
 85 90 95

Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn  
 100 105 110

Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val  
 115 120 125

Ile Leu Val Met Leu Leu Gly Pro Leu Leu Phe Leu Ala Cys Gln Leu  
 130 135 140

Phe Val Ile Asn Met Lys Glu Ile Val Arg Thr Lys Glu Tyr Glu Gly  
 145 150 155 160

Asn Met Thr Trp Lys Ile Lys Leu Arg Ser Ala Val Tyr Leu Ser Asp  
 165 170 175

Ala Thr Val Thr Thr Leu Gly Asn Leu Val Pro Phe Thr Leu Thr Leu  
 180 185 190

Leu Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His  
 210 215 220

Ile Lys Val Leu Gln Thr Val Ile Phe Phe Leu Leu Leu Cys Ala Val  
 225 230 235 240

Tyr Phe Leu Ser Ile Met Ile Ser Val Trp Ser Phe Gly Ser Leu Glu  
 245 250 255

Asn Lys Pro Val Phe Met Phe Cys Lys Ala Ile Arg Phe Ser Tyr Pro  
 260 265 270

Ser Ile His Pro Phe Ile Leu Ile Cys Gly Asn Lys Lys Leu Lys Gln  
 275 280 285

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 290 295 300



Lys Pro Ser Ser Pro  
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Met Thr Thr Phe Ile Pro Ile Ile Phe Ser Ser Val Val Val Val Leu	
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ttt gtt att gga aat ttt gct aat ggc ttc ata gca ttg gta aat tcc	96
Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser	
20 25 30	
att gag cgg gtc aag aga caa aag atc tct ttt gct gac cag att ctc	144
Ile Glu Arg Val Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu	
35 40 45	
act gct ctg gcg gtc tcc aga gtt ggt ttg ctc tgg gta tta tta tta	192
Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu	
50 55 60	
aat tgg tat tca act gtg ttt aat cca gct ttt tat agt gta gaa gta	240
Asn Trp Tyr Ser Thr Val Phe Asn Pro Ala Phe Tyr Ser Val Glu Val	
65 70 75 80	
aga act act gct tat aat gtc tgg gca gta acc ggc cat ttc agc aac	288
Arg Thr Thr Ala Tyr Asn Val Trp Ala Val Thr Gly His Phe Ser Asn	
85 90 95	
tgg ctt gct act agc ctc agc ata ttt tat ttg ctc aag att gcc aat	336
Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn	
100 105 110	
ttc tcc aac ctt att ttt ctt cac tta aag agg aga gtt aag agt gtc	384
Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val	
115 120 125	
att ctg gtg atg ctg ttg ggg cct tta cta ttt ttg gct tgt caa ctt	432
Ile Leu Val Met Leu Leu Gly Pro Leu Leu Phe Leu Ala Cys Gln Leu	
130 135 140	
ttt gtg ata aac atg aaa gag att gta cgg aca aaa gaa tat gaa gga	480
Phe Val Ile Asn Met Lys Glu Ile Val Arg Thr Lys Glu Tyr Glu Gly	
145 150 155 160	
aac atg act tgg aag atc aaa ttg agg agt gca gtg tac ctt tca gat	528
Asn Met Thr Trp Lys Ile Lys Leu Arg Ser Ala Val Tyr Leu Ser Asp	
165 170 175	
gcg act gta acc acg cta gga aac tta gtg ccc ttc act ctg acc ctg	576
Ala Thr Val Thr Thr Leu Gly Asn Leu Val Pro Phe Thr Leu Thr Leu	
180 185 190	
cta tgt ttt ttg ctg tta atc tgt tct ctg tgt aaa cat ctc aag aag	624
Leu Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys	
195 200 205	
atg cag ctc cat ggt aaa gga tct caa gat ccc agc acc aag gtc cac	672
Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His	
210 215 220	
ata aaa gct ttg caa act gtg atc ttt ttc ctc ttg tta tgt gcc gtt	720
Ile Lys Ala Leu Gln Thr Val Ile Phe Phe Leu Leu Leu Cys Ala Val	
225 230 235 240	

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tac ttt ctg tcc ata atg ata tca gtt tgg agt ttt ggg agt ctg gaa	768
Tyr Phe Leu Ser Ile Met Ile Ser Val Trp Ser Phe Gly Ser Leu Glu	
245 250 255	
aac aaa cct gtc ttc atg ttc tgc aaa gct att aga ttc agc tat cct	816
Asn Lys Pro Val Phe Met Phe Cys Lys Ala Ile Arg Phe Ser Tyr Pro	
260 265 270	
tca atc cac cca ttc atc ctg att tgg gga aac aag aag cta aag cag	864
Ser Ile His Pro Phe Ile Leu Ile Trp Gly Asn Lys Lys Leu Lys Gln	
275 280 285	
act ttt ctt tca gtt ttg cgg caa gtg agg tac tgg gtg aaa gga gag	912
Thr Phe Leu Ser Val Leu Arg Gln Val Arg Tyr Trp Val Lys Gly Glu	
290 295 300	
aag cct tca tct cca tga	930
Lys Pro Ser Ser Pro	
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<210> 194  
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Ile Glu Arg Val Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu	
35 40 45	
Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu	
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Asn Trp Tyr Ser Thr Val Phe Asn Pro Ala Phe Tyr Ser Val Glu Val	
65 70 75 80	
Arg Thr Thr Ala Tyr Asn Val Trp Ala Val Thr Gly His Phe Ser Asn	
85 90 95	
Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn	
100 105 110	
Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val	
115 120 125	
Ile Leu Val Met Leu Leu Gly Pro Leu Leu Phe Leu Ala Cys Gln Leu	

130                                      135                                      140  
 Phe Val Ile Asn Met Lys Glu Ile Val Arg Thr Lys Glu Tyr Glu Gly  
 145                                      150                                      155                                      160  
 Asn Met Thr Trp Lys Ile Lys Leu Arg Ser Ala Val Tyr Leu Ser Asp  
                                     165                                      170                                      175  
 Ala Thr Val Thr Thr Leu Gly Asn Leu Val Pro Phe Thr Leu Thr Leu  
                                     180                                      185                                      190  
 Leu Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
                                     195                                      200                                      205  
 Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His  
                                     210                                      215                                      220  
 Ile Lys Ala Leu Gln Thr Val Ile Phe Phe Leu Leu Leu Cys Ala Val  
 225                                      230                                      235                                      240  
 Tyr Phe Leu Ser Ile Met Ile Ser Val Trp Ser Phe Gly Ser Leu Glu  
                                     245                                      250                                      255  
 Asn Lys Pro Val Phe Met Phe Cys Lys Ala Ile Arg Phe Ser Tyr Pro  
                                     260                                      265                                      270  
 Ser Ile His Pro Phe Ile Leu Ile Trp Gly Asn Lys Lys Leu Lys Gln  
                                     275                                      280                                      285  
 Thr Phe Leu Ser Val Leu Arg Gln Val Arg Tyr Trp Val Lys Gly Glu  
                                     290                                      295                                      300  
 Lys Pro Ser Ser Pro  
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 ttt gtt att gga aat ttt gct aat ggc ttc ata gca ttg gta aat tcc 96  
 Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser  
 20 25 30  
 att gag cgg gtc aag aga caa aag atc tct ttt gct gac cag att ctc 144  
 Ile Glu Arg Val Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu  
 35 40 45  
 act gct ctg gcg gtc tcc aga gtt ggt ttg ctc tgg gta tta tta tta 192  
 Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu  
 50 55 60  
 aat tgg tat tca act gtg ttt aat cca gct ttt tat agt gta gaa gta 240  
 Asn Trp Tyr Ser Thr Val Phe Asn Pro Ala Phe Tyr Ser Val Glu Val  
 65 70 75 80

aga act act gct tat aat gtc tgg gca gta acc ggc cat ttc agc aac	288
Arg Thr Thr Ala Tyr Asn Val Trp Ala Val Thr Gly His Phe Ser Asn	
85 90 95	
tgg ctt gct act agc ctc agc ata ttt tat ttg ctc aag att gcc aat	336
Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn	
100 105 110	
ttc tcc aac ctt att ttt ctt cac tta aag agg aga gtt aag agt gtc	384
Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val	
115 120 125	
att ctg gtg atg ctg ttg ggg cct tta cta ttt ttg gct tgt caa ctt	432
Ile Leu Val Met Leu Leu Gly Pro Leu Leu Phe Leu Ala Cys Gln Leu	
130 135 140	
ttt gtg ata aac atg aaa gag att gta cgg aca aaa gaa tat gaa gga	480
Phe Val Ile Asn Met Lys Glu Ile Val Arg Thr Lys Glu Tyr Glu Gly	
145 150 155 160	
aac ttg act tgg aag atc aaa ttg agg agt gca gtg tac ctt tca gat	528
Asn Leu Thr Trp Lys Ile Lys Leu Arg Ser Ala Val Tyr Leu Ser Asp	
165 170 175	
gcg act gta acc acg cta gga aac tta gtg ccc ttc act ctg acc ctg	576
Ala Thr Val Thr Thr Leu Gly Asn Leu Val Pro Phe Thr Leu Thr Leu	
180 185 190	
cta tgt ttt ttg ctg tta atc tgt tct ctg tgt aaa cat ctc aag aag	624
Leu Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys	
195 200 205	
atg cag ctc cat ggt aaa gga tct caa gat ccc agc acc aag gtc cac	672
Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His	
210 215 220	
ata aaa gct ttg caa act gtg atc ttt ttc ctc ttg tta tgt gcc gtt	720
Ile Lys Ala Leu Gln Thr Val Ile Phe Phe Leu Leu Leu Cys Ala Val	
225 230 235 240	
tac ttt ctg tcc ata atg ata tca gtt tgg agt ttt ggg agt ctg gaa	768
Tyr Phe Leu Ser Ile Met Ile Ser Val Trp Ser Phe Gly Ser Leu Glu	
245 250 255	
aac aaa cct gtc ttc atg ttc tgc aaa gct att aga ttc agc tat cct	816
Asn Lys Pro Val Phe Met Phe Cys Lys Ala Ile Arg Phe Ser Tyr Pro	
260 265 270	
tca atc cac cca ttc atc ctg att tgg gga aac aag aag cta aag cag	864
Ser Ile His Pro Phe Ile Leu Ile Trp Gly Asn Lys Lys Leu Lys Gln	
275 280 285	
act ttt ctt tca gtt ttg cgg caa gtg agg tac tgg gtg aaa gga gag	912
Thr Phe Leu Ser Val Leu Arg Gln Val Arg Tyr Trp Val Lys Gly Glu	
290 295 300	
aag cct tca tct cca tga	930
Lys Pro Ser Ser Pro	
305	

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<400> 196

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Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser  
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Ile Glu Arg Val Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu  
 35 40 45

Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu  
 50 55 60

Asn Trp Tyr Ser Thr Val Phe Asn Pro Ala Phe Tyr Ser Val Glu Val  
 65 70 75 80

Arg Thr Thr Ala Tyr Asn Val Trp Ala Val Thr Gly His Phe Ser Asn  
 85 90 95

Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn  
 100 105 110

Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val  
 115 120 125

Ile Leu Val Met Leu Leu Gly Pro Leu Leu Phe Leu Ala Cys Gln Leu  
 130 135 140

Phe Val Ile Asn Met Lys Glu Ile Val Arg Thr Lys Glu Tyr Glu Gly  
 145 150 155 160

Asn Leu Thr Trp Lys Ile Lys Leu Arg Ser Ala Val Tyr Leu Ser Asp  
 165 170 175

Ala Thr Val Thr Thr Leu Gly Asn Leu Val Pro Phe Thr Leu Thr Leu  
 180 185 190

Leu Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His

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Ile Glu Arg Val Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu  
 35 40 45

Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu  
 50 55 60

Asn Trp Tyr Ser Thr Val Phe Asn Pro Ala Phe Tyr Ser Val Glu Val  
 65 70 75 80

Arg Thr Thr Ala Tyr Asn Val Trp Ala Val Thr Gly His Phe Ser Asn  
 85 90 95

Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn  
 100 105 110

Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val  
 115 120 125

Ile Leu Val Met Leu Leu Gly Pro Leu Leu Phe Leu Ala Cys Gln Leu  
 130 135 140

Phe Val Ile Asn Met Lys Glu Ile Val Arg Thr Lys Glu Tyr Glu Gly  
 145 150 155 160

Asn Leu Thr Trp Lys Ile Lys Leu Arg Ser Ala Val Tyr Leu Ser Asp  
 165 170 175

Ala Thr Val Thr Thr Leu Gly Asn Leu Val Pro Phe Thr Leu Thr Leu  
 180 185 190

Leu Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His



210

215

220

Ile Lys Ala Leu Gln Thr Val Ile Phe Phe Leu Leu Leu Cys Ala Val  
225 230 235 240

Tyr Phe Leu Ser Ile Met Ile Ser Val Trp Ser Phe Gly Ser Leu Glu  
245 250 255

Asn Lys Pro Val Phe Met Phe Cys Lys Ala Ile Arg Phe Ser Tyr Pro  
260 265 270

Ser Ile His Pro Phe Ile Leu Ile Trp Gly Asn Lys Lys Leu Lys Gln  
275 280 285

Thr Phe Leu Ser Val Leu Arg Gln Val Arg Tyr Trp Val Lys Gly Glu  
290 295 300

Lys Pro Ser Ser Pro  
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 ttt gtt att gga aat ttt gct aat ggc ttc ata gca ttg gta aat tcc 96  
 Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser  
 20 25 30  
 att gag cgg gtc aag aga caa aag atc tct ttt gct gac cag att ctc 144  
 Ile Glu Arg Val Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu  
 35 40 45  
 act gct ctg gcg gtc tcc aga gtt ggt ttg ctc tgg gta tta tta tta 192  
 Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu  
 50 55 60  
 aat tgg tat tca act gtg ttt aat cca gct ttt tat agt gta gaa gta 240  
 Asn Trp Tyr Ser Thr Val Phe Asn Pro Ala Phe Tyr Ser Val Glu Val  
 65 70 75 80  
 aga act act gct tat aat gtc tgg gca gta acc ggc cat ttc agc aac 288  
 Arg Thr Thr Ala Tyr Asn Val Trp Ala Val Thr Gly His Phe Ser Asn  
 85 90 95  
 tgg ctt gct act agc ctc agc ata ttt tat ttg ctc aag att gcc aat 336  
 Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn  
 100 105 110  
 ttc tcc aac ctt att ttt ctt cac tta aag agg aga gtt aag agt gtc 384  
 Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val  
 115 120 125  
 att ctg gtg atg ctg ttg ggg cct tta cta ttt ttg gct tgt caa ctt 432  
 Ile Leu Val Met Leu Leu Gly Pro Leu Leu Phe Leu Ala Cys Gln Leu  
 130 135 140  
 ttt gtg ata aac atg aaa gag att gta cgg aca aaa gaa tat gaa gga 480  
 Phe Val Ile Asn Met Lys Glu Ile Val Arg Thr Lys Glu Tyr Glu Gly  
 145 150 155 160

aac ttg act tgg aag atc aaa ttg agg agt gca gtg tac ctt tca gat 528  
 Asn Leu Thr Trp Lys Ile Lys Leu Arg Ser Ala Val Tyr Leu Ser Asp  
 165 170 175

gcg act gta acc acg cta gga aac tta gtg ccc ttc act ctg acc ctg 576  
 Ala Thr Val Thr Thr Leu Gly Asn Leu Val Pro Phe Thr Leu Thr Leu  
 180 185 190

cta tgt ttt ttg ctg tta atc tgt tct ctg tgt aaa cat ctc aag aag 624  
 Leu Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

atg cag ctc cat ggt aaa gga tct caa gat ctc agc acc aag gtc cac 672  
 Met Gln Leu His Gly Lys Gly Ser Gln Asp Leu Ser Thr Lys Val His  
 210 215 220

ata aaa gct ttg caa act gtg atc ttt ttc ctc ttg tta tgt gcc gtt 720  
 Ile Lys Ala Leu Gln Thr Val Ile Phe Phe Leu Leu Leu Cys Ala Val  
 225 230 235 240

tac ttt ctg tcc ata atg ata tca gtt tgg agt ttt ggg agt ctg gaa 768  
 Tyr Phe Leu Ser Ile Met Ile Ser Val Trp Ser Phe Gly Ser Leu Glu  
 245 250 255

aac aaa cct gtc ttc atg ttc tgc aaa gct att aga ttc agc tat cct 816  
 Asn Lys Pro Val Phe Met Phe Cys Lys Ala Ile Arg Phe Ser Tyr Pro  
 260 265 270

tca atc cac cca ttc atc ctg att tgg gga aac aag aag cta aag cag 864  
 Ser Ile His Pro Phe Ile Leu Ile Trp Gly Asn Lys Lys Leu Lys Gln  
 275 280 285

act ttt ctt tca gtt ttg cgg caa gtg agg tac tgg gtg aaa gga gag 912  
 Thr Phe Leu Ser Val Leu Arg Gln Val Arg Tyr Trp Val Lys Gly Glu  
 290 295 300

aag cct tca tct cca tga 930  
 Lys Pro Ser Ser Pro  
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Met Thr Thr Phe Ile Pro Ile Ile Phe Ser Ser Val Val Val Val Leu  
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Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser  
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Ile Glu Arg Val Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu  
 35 40 45

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Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu  
 50 55 60

Asn Trp Tyr Ser Thr Val Phe Asn Pro Ala Phe Tyr Ser Val Glu Val  
 65 70 75 80

Arg Thr Thr Ala Tyr Asn Val Trp Ala Val Thr Gly His Phe Ser Asn  
 85 90 95

Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn  
 100 105 110

Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val  
 115 120 125

Ile Leu Val Met Leu Leu Gly Pro Leu Leu Phe Leu Ala Cys Gln Leu  
 130 135 140

Phe Val Ile Asn Met Lys Glu Ile Val Arg Thr Lys Glu Tyr Glu Gly  
 145 150 155 160

Asn Leu Thr Trp Lys Ile Lys Leu Arg Ser Ala Val Tyr Leu Ser Asp  
 165 170 175

Ala Thr Val Thr Thr Leu Gly Asn Leu Val Pro Phe Thr Leu Thr Leu  
 180 185 190

Leu Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Leu Ser Thr Lys Val His  
 210 215 220

Ile Lys Ala Leu Gln Thr Val Ile Phe Phe Leu Leu Leu Cys Ala Val  
 225 230 235 240

Tyr Phe Leu Ser Ile Met Ile Ser Val Trp Ser Phe Gly Ser Leu Glu  
 245 250 255

Asn Lys Pro Val Phe Met Phe Cys Lys Ala Ile Arg Phe Ser Tyr Pro  
 260 265 270

Ser Ile His Pro Phe Ile Leu Ile Trp Gly Asn Lys Lys Leu Lys Gln  
 275 280 285

Thr Phe Leu Ser Val Leu Arg Gln Val Arg Tyr Trp Val Lys Gly Glu

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Lys Pro Ser Ser Pro  
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1			5					10					15			
ttt	gtt	att	gga	aat	ttt	gct	aat	ggc	ttc	ata	gca	ttg	gta	aat	tcc	96
Phe	Val	Ile	Gly	Asn	Phe	Ala	Asn	Gly	Phe	Ile	Ala	Leu	Val	Asn	Ser	
			20					25					30			
att	gag	cgg	gtc	aag	aga	caa	aag	atc	tct	ttt	gct	gac	cag	att	ctc	144
Ile	Glu	Arg	Val	Lys	Arg	Gln	Lys	Ile	Ser	Phe	Ala	Asp	Gln	Ile	Leu	
		35					40					45				
act	gct	ctg	gcg	gtc	tcc	aga	gtt	ggc	ttg	ctc	tgg	gta	tta	tta	tta	192
Thr	Ala	Leu	Ala	Val	Ser	Arg	Val	Gly	Leu	Leu	Trp	Val	Leu	Leu	Leu	
	50					55					60					
aat	tgg	tat	tca	act	gtg	ttt	aat	cca	gct	ttt	tat	agt	gta	gaa	gta	240
Asn	Trp	Tyr	Ser	Thr	Val	Phe	Asn	Pro	Ala	Phe	Tyr	Ser	Val	Glu	Val	
65					70					75				80		
aga	act	act	gct	tat	aat	gtc	tgg	gca	gta	acc	ggc	cat	ttc	agc	aac	288
Arg	Thr	Thr	Ala	Tyr	Asn	Val	Trp	Ala	Val	Thr	Gly	His	Phe	Ser	Asn	
				85				90						95		
tgg	ctt	gct	act	agc	ctc	agc	ata	ttt	tat	ttg	ctc	aag	att	gcc	aat	336
Trp	Leu	Ala	Thr	Ser	Leu	Ser	Ile	Phe	Tyr	Leu	Leu	Lys	Ile	Ala	Asn	
			100					105					110			
ttc	tcc	aac	ctt	att	ttt	ctt	cac	tta	aag	agg	aga	gtt	aag	agt	gtc	384
Phe	Ser	Asn	Leu	Ile	Phe	Leu	His	Leu	Lys	Arg	Arg	Val	Lys	Ser	Val	
		115					120					125				
att	ctg	gtg	atg	ctg	ttg	ggg	cct	tta	cta	ttt	ttg	gct	tgt	caa	ctt	432
Ile	Leu	Val	Met	Leu	Leu	Gly	Pro	Leu	Leu	Phe	Leu	Ala	Cys	Gln	Leu	
	130					135					140					
ttt	gtg	ata	aac	atg	aaa	gag	att	gta	cgg	aca	aaa	gaa	tat	gaa	gga	480
Phe	Val	Ile	Asn	Met	Lys	Glu	Ile	Val	Arg	Thr	Lys	Glu	Tyr	Glu	Gly	
145					150				155					160		
aac	ttg	act	tgg	aag	atc	aaa	ttg	agg	agt	gca	gtg	tac	ctt	tca	gat	528
Asn	Leu	Thr	Trp	Lys	Ile	Lys	Leu	Arg	Ser	Ala	Val	Tyr	Leu	Ser	Asp	
				165				170						175		
gcg	act	gta	acc	acg	cta	gga	aac	tta	gtg	ccc	ttc	act	ctg	acc	ctg	576
Ala	Thr	Val	Thr	Thr	Leu	Gly	Asn	Leu	Val	Pro	Phe	Thr	Leu	Thr	Leu	
			180					185					190			
cta	tgt	ttt	ttg	ctg	tta	atc	tat	tct	ctg	tgt	aaa	cat	ctc	aag	aag	624
Leu	Cys	Phe	Leu	Leu	Leu	Ile	Tyr	Ser	Leu	Cys	Lys	His	Leu	Lys	Lys	
		195					200					205				
atg	cag	ctc	cat	ggt	aaa	gga	tct	caa	gat	ccc	agc	acc	aag	gtc	cac	672
Met	Gln	Leu	His	Gly	Lys	Gly	Ser	Gln	Asp	Pro	Ser	Thr	Lys	Val	His	
	210					215					220					
ata	aaa	gct	ttg	caa	act	gtg	atc	ttt	ttc	ctc	ttg	tta	tgt	gcc	gtt	720
Ile	Lys	Ala	Leu	Gln	Thr	Val	Ile	Phe	Phe	Leu	Leu	Leu	Cys	Ala	Val	
225					230					235					240	

tac ttt ctg tcc ata atg ata tca gtt tgg agt ttt ggg agt ctg gaa	768
Tyr Phe Leu Ser Ile Met Ile Ser Val Trp Ser Phe Gly Ser Leu Glu	
245 250 255	
aac aaa cct gtc ttc atg ttc tgc aaa gct att aga ttc agc tat cct	816
Asn Lys Pro Val Phe Met Phe Cys Lys Ala Ile Arg Phe Ser Tyr Pro	
260 265 270	
tca atc cac cca ttc atc ctg att tgg gga aac aag aag cta aag cag	864
Ser Ile His Pro Phe Ile Leu Ile Trp Gly Asn Lys Lys Leu Lys Gln	
275 280 285	
act ttt ctt tca gtt ttg cgg caa gtg agg tac tgg gtg aaa gga gag	912
Thr Phe Leu Ser Val Leu Arg Gln Val Arg Tyr Trp Val Lys Gly Glu	
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Lys Pro Ser Ser Pro	
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Ile Glu Arg Val Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu	
35 40 45	
Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu	
50 55 60	
Asn Trp Tyr Ser Thr Val Phe Asn Pro Ala Phe Tyr Ser Val Glu Val	
65 70 75 80	
Arg Thr Thr Ala Tyr Asn Val Trp Ala Val Thr Gly His Phe Ser Asn	
85 90 95	
Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn	
100 105 110	
Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val	
115 120 125	

340/447

Ile Leu Val Met Leu Leu Gly Pro Leu Leu Phe Leu Ala Cys Gln Leu  
 130 135 140  
 Phe Val Ile Asn Met Lys Glu Ile Val Arg Thr Lys Glu Tyr Glu Gly  
 145 150 155 160  
 Asn Leu Thr Trp Lys Ile Lys Leu Arg Ser Ala Val Tyr Leu Ser Asp  
 165 170 175  
 Ala Thr Val Thr Thr Leu Gly Asn Leu Val Pro Phe Thr Leu Thr Leu  
 180 185 190  
 Leu Cys Phe Leu Leu Leu Ile Tyr Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205  
 Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His  
 210 215 220  
 Ile Lys Ala Leu Gln Thr Val Ile Phe Phe Leu Leu Leu Cys Ala Val  
 225 230 235 240  
 Tyr Phe Leu Ser Ile Met Ile Ser Val Trp Ser Phe Gly Ser Leu Glu  
 245 250 255  
 Asn Lys Pro Val Phe Met Phe Cys Lys Ala Ile Arg Phe Ser Tyr Pro  
 260 265 270  
 Ser Ile His Pro Phe Ile Leu Ile Trp Gly Asn Lys Lys Leu Lys Gln  
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1			5						10				15			
ttt	gtg	att	gga	aat	ttt	gct	aat	ggc	ttc	ata	gca	ttg	gta	aat	tcc	96
Phe	Val	Ile	Gly	Asn	Phe	Ala	Asn	Gly	Phe	Ile	Ala	Leu	Val	Asn	Ser	
			20					25				30				
att	gag	tgg	ttc	aag	aga	caa	aag	atc	tct	ttt	gct	gac	caa	att	ctc	144
Ile	Glu	Trp	Phe	Lys	Arg	Gln	Lys	Ile	Ser	Phe	Ala	Asp	Gln	Ile	Leu	
		35					40				45					
act	gct	ctg	gca	gtc	tcc	aga	ggt	ggg	tta	ctc	tgg	gta	tta	gta	tta	192
Thr	Ala	Leu	Ala	Val	Ser	Arg	Val	Gly	Leu	Leu	Trp	Val	Leu	Val	Leu	
	50					55					60					
aat	tgg	tat	gca	act	gag	ttg	aat	cca	gct	ttt	aac	agt	ata	gaa	gta	240
Asn	Trp	Tyr	Ala	Thr	Glu	Leu	Asn	Pro	Ala	Phe	Asn	Ser	Ile	Glu	Val	
65					70					75				80		
aga	att	act	gct	tac	aat	gtc	tgg	gca	gta	atc	aac	cat	ttc	agc	aac	288
Arg	Ile	Thr	Ala	Tyr	Asn	Val	Trp	Ala	Val	Ile	Asn	His	Phe	Ser	Asn	
				85					90					95		
tgg	ctt	gct	act	agc	ctc	agc	ata	ttt	tat	ttg	ctc	aag	att	gcc	aat	336
Trp	Leu	Ala	Thr	Ser	Leu	Ser	Ile	Phe	Tyr	Leu	Leu	Lys	Ile	Ala	Asn	
			100					105					110			
ttc	tcc	aac	ctt	att	ttt	ctt	cac	tta	aag	agg	aga	ggt	aag	agt	ggt	384
Phe	Ser	Asn	Leu	Ile	Phe	Leu	His	Leu	Lys	Arg	Arg	Val	Lys	Ser	Val	
		115					120					125				
ggt	ctg	gtg	ata	cta	ttg	ggg	cct	ttg	cta	ttt	ttg	ggt	tgt	cat	ctt	432
Val	Leu	Val	Ile	Leu	Leu	Gly	Pro	Leu	Leu	Phe	Leu	Val	Cys	His	Leu	
	130					135					140					
ttt	gtg	ata	aac	atg	aat	cag	att	ata	tgg	aca	aaa	gaa	tat	gaa	gga	480
Phe	Val	Ile	Asn	Met	Asn	Gln	Ile	Ile	Trp	Thr	Lys	Glu	Tyr	Glu	Gly	
145					150					155				160		
aac	atg	act	tgg	aag	atc	aaa	ctg	agg	agt	gca	atg	tac	ctt	tca	aat	528
Asn	Met	Thr	Trp	Lys	Ile	Lys	Leu	Arg	Ser	Ala	Met	Tyr	Leu	Ser	Asn	
				165					170					175		

aca acg gta acc atc cta gca aac tta gtt ccc ttc act ctg acc ctg 576  
 Thr Thr Val Thr Ile Leu Ala Asn Leu Val Pro Phe Thr Leu Thr Leu  
 180 185 190

ata tct ttt ctg ctg tta atc tgt tct ctg tgt aaa cat ctc aaa aag 624  
 Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

atg cag ctc cat ggc aaa gga tct caa gat ccc agc atg aag gtc cac 672  
 Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Met Lys Val His  
 210 215 220

ata aaa gct atg caa act gtg acc tcc ttc ctc ttg tta tgt gcc att 720  
 Ile Lys Ala Met Gln Thr Val Thr Ser Phe Leu Leu Leu Cys Ala Ile  
 225 230 235 240

tac ttt ctg tcc ata atc atg tca gtt tag agttttgaga gtctggaaaa 770  
 Tyr Phe Leu Ser Ile Ile Met Ser Val  
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caaacctgtc ttcattgttct gcgaagctat tgcattcagc tatecttcaa cccacccatt 830  
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 20 25 30

Ile Glu Trp Phe Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu  
 35 40 45

Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Val Leu  
 50 55 60

Asn Trp Tyr Ala Thr Glu Leu Asn Pro Ala Phe Asn Ser Ile Glu Val  
 65 70 75 80

Arg Ile Thr Ala Tyr Asn Val Trp Ala Val Ile Asn His Phe Ser Asn  
 85 90 95

Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn  
 100 105 110

Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val  
 115 120 125

Val Leu Val Ile Leu Leu Gly Pro Leu Leu Phe Leu Val Cys His Leu  
 130 135 140

Phe Val Ile Asn Met Asn Gln Ile Ile Trp Thr Lys Glu Tyr Glu Gly  
 145 150 155 160

Asn Met Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr Leu Ser Asn  
 165 170 175

Thr Thr Val Thr Ile Leu Ala Asn Leu Val Pro Phe Thr Leu Thr Leu  
 180 185 190

Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Met Lys Val His  
 210 215 220

Ile Lys Ala Met Gln Thr Val Thr Ser Phe Leu Leu Leu Cys Ala Ile  
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Tyr Phe Leu Ser Ile Ile Met Ser Val  
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Met	Ile	Thr	Phe	Leu	Pro	Ile	Ile	Phe	Ser	Ile	Leu	Ile	Val	Val	Thr	
1				5					10					15		

ttt	gtg	att	gga	aat	ttt	gct	aat	ggc	ttc	ata	gca	ttg	gta	aat	tcc	96
Phe	Val	Ile	Gly	Asn	Phe	Ala	Asn	Gly	Phe	Ile	Ala	Leu	Val	Asn	Ser	
			20					25					30			

att	gag	tgg	ttc	aag	aga	caa	aag	atc	tct	ttt	gct	gac	caa	att	ctc	144
Ile	Glu	Trp	Phe	Lys	Arg	Gln	Lys	Ile	Ser	Phe	Ala	Asp	Gln	Ile	Leu	
		35					40					45				

act	gct	ctg	gca	gtc	tcc	aga	ggt	ggc	tta	ctc	tgg	gta	tta	gta	tta	192
Thr	Ala	Leu	Ala	Val	Ser	Arg	Val	Gly	Leu	Leu	Trp	Val	Leu	Val	Leu	
	50					55					60					

aat	tgg	tat	gca	act	gag	ttg	aat	cca	gct	ttt	aac	agt	ata	gaa	gta	240
Asn	Trp	Tyr	Ala	Thr	Glu	Leu	Asn	Pro	Ala	Phe	Asn	Ser	Ile	Glu	Val	
65					70					75					80	

aga	att	act	gct	tac	aat	gtc	tgg	gca	gta	atc	aac	cat	ttc	agc	aac	288
Arg	Ile	Thr	Ala	Tyr	Asn	Val	Trp	Ala	Val	Ile	Asn	His	Phe	Ser	Asn	
				85					90					95		

tgg	ctt	gct	act	agc	ctc	agc	ata	ttt	tat	ttg	ctc	aag	att	gcc	aat	336
Trp	Leu	Ala	Thr	Ser	Leu	Ser	Ile	Phe	Tyr	Leu	Leu	Lys	Ile	Ala	Asn	
			100					105						110		

ttc	tcc	aac	ctt	att	ttt	ctt	cac	tta	aag	agg	aga	ggt	aag	agt	ggt	384
Phe	Ser	Asn	Leu	Ile	Phe	Leu	His	Leu	Lys	Arg	Arg	Val	Lys	Ser	Val	
		115					120					125				

ggt	ctg	gtg	ata	cta	ttg	ggg	cct	ttg	cta	ttt	ttg	ggt	tgt	cat	ctt	432
Val	Leu	Val	Ile	Leu	Leu	Gly	Pro	Leu	Leu	Phe	Leu	Val	Cys	His	Leu	
	130					135					140					

ttt	gtg	ata	aac	atg	aat	cag	att	ata	tgg	aca	aaa	gaa	tat	gaa	gga	480
Phe	Val	Ile	Asn	Met	Asn	Gln	Ile	Ile	Trp	Thr	Lys	Glu	Tyr	Glu	Gly	
145					150					155					160	

aac	atg	act	tgg	aag	atc	aaa	ctg	agg	agt	gca	atg	tac	ctt	tca	aat	528
Asn	Met	Thr	Trp	Lys	Ile	Lys	Leu	Arg	Ser	Ala	Met	Tyr	Leu	Ser	Asn	
				165					170					175		

aca	acg	gta	acc	atc	cta	gca	aac	tta	ggt	ccc	ttc	act	ctg	acc	ctg	576
Thr	Thr	Val	Thr	Ile	Leu	Ala	Asn	Leu	Val	Pro	Phe	Thr	Leu	Thr	Leu	
			180					185					190			

345/447

ata tct ttt ctg ctg tta atc tgt tct ctg tgt aaa cat ctc aaa aag	624
Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys	
195 200 205	
atg cag ctc cat ggc aaa gga tct caa gat ccc agc atg aag gtc cac	672
Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Met Lys Val His	
210 215 220	
ata aaa gct atg caa act gtg acc tcc ttc ctc ttg tta tgt gcc att	720
Ile Lys Ala Met Gln Thr Val Thr Ser Phe Leu Leu Cys Ala Ile	
225 230 235 240	
tac ttt ctg tcc ata atc atg tca gtt tag agttttgaga gtctggaaaa	770
Tyr Phe Leu Ser Ile Ile Met Ser Val	
245	
caaacctgtc ttcatgttct gcgaagctat tgcattcagc tatccttcaa cccacccatt	830
catgctgatt tggggaaaca agaagctaaa gcagactttt ctttcagttt tgtggcatgt	890
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Ile Glu Trp Phe Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu	
35 40 45	
Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Val Leu	
50 55 60	
Asn Trp Tyr Ala Thr Glu Leu Asn Pro Ala Phe Asn Ser Ile Glu Val	
65 70 75 80	
Arg Ile Thr Ala Tyr Asn Val Trp Ala Val Ile Asn His Phe Ser Asn	
85 90 95	
Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn	
100 105 110	
Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val	
115 120 125	

Val Leu Val Ile Leu Leu Gly Pro Leu Leu Phe Leu Val Cys His Leu  
 130 135 140

Phe Val Ile Asn Met Asn Gln Ile Ile Trp Thr Lys Glu Tyr Glu Gly  
 145 150 155 160

Asn Met Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr Leu Ser Asn  
 165 170 175

Thr Thr Val Thr Ile Leu Ala Asn Leu Val Pro Phe Thr Leu Thr Leu  
 180 185 190

Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Met Lys Val His  
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Tyr Phe Leu Ser Ile Ile Met Ser Val  
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1 5 10 15	
ttt gtg att gga aat ttt gct aat ggc ttc ata gca ttg gta aat tcc	96
Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser	
20 25 30	
att gag tgg ttc aag aga caa aag atc tct ttt gct gac caa att ctc	144
Ile Glu Trp Phe Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu	
35 40 45	
act gct ctg gca gtc tcc aga gtt ggt tta ctc tgg gta tta gta tta	192
Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Val Leu	
50 55 60	
aat tgg tat gca act gag ttg aat cca gct ttt aac agt ata gaa gta	240
Asn Trp Tyr Ala Thr Glu Leu Asn Pro Ala Phe Asn Ser Ile Glu Val	
65 70 75 80	
aga att act gct tac aat gtc tgg gca gta atc aac cat ttc agc aac	288
Arg Ile Thr Ala Tyr Asn Val Trp Ala Val Ile Asn His Phe Ser Asn	
85 90 95	
tgg ctt gct act agc ctc agc ata ttt tat ttg ctc aag att gcc aat	336
Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn	
100 105 110	
ttc tcc aac ctt att ttt ctt cac tta aag agg aga gtt aag agt gtt	384
Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val	
115 120 125	
gtt ctg gtg ata cta ttg ggg cct ttg cta ttt ttg gtt tgt cat ctt	432
Val Leu Val Ile Leu Leu Gly Pro Leu Leu Phe Leu Val Cys His Leu	
130 135 140	
ttt gtg ata aac atg aat cag att ata tgg aca aaa gaa tat gaa gga	480
Phe Val Ile Asn Met Asn Gln Ile Ile Trp Thr Lys Glu Tyr Glu Gly	
145 150 155 160	
aac atg act tgg aag atc aaa ctg agg agt gca atg tac ctt tca aat	528
Asn Met Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr Leu Ser Asn	
165 170 175	
aca acg gta acc atc cta gca aac tta gtt ccc ttc act ctg acc ctg	576
Thr Thr Val Thr Ile Leu Ala Asn Leu Val Pro Phe Thr Leu Thr Leu	
180 185 190	
ata tct ttt ctg ctg tta atc tgt tct ctg tgt aaa cat ctc aaa aag	624
Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys	
195 200 205	
atg cag ctc cat ggc aaa gga tct caa gat ccc agc atg aag gtc cac	672

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Met	Gln	Leu	His	Gly	Lys	Gly	Ser	Gln	Asp	Pro	Ser	Met	Lys	Val	His	
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ata	aaa	gct	atg	caa	act	gtg	acc	tcc	ttc	ctc	ttg	tta	tgt	gcc	att	720
Ile	Lys	Ala	Met	Gln	Thr	Val	Thr	Ser	Phe	Leu	Leu	Leu	Cys	Ala	Ile	
225					230					235					240	
tac	ttt	ctg	tcc	ata	atc	atg	tca	gtt	tgg	agt	ttt	gag	agt	ctg	gaa	768
Tyr	Phe	Leu	Ser	Ile	Ile	Met	Ser	Val	Trp	Ser	Phe	Glu	Ser	Leu	Glu	
				245					250					255		
aac	aaa	cct	gtc	ttc	atg	ttc	tgc	gaa	gct	att	gca	ttc	agc	tat	cct	816
Asn	Lys	Pro	Val	Phe	Met	Phe	Cys	Glu	Ala	Ile	Ala	Phe	Ser	Tyr	Pro	
			260					265					270			
tca	acc	cac	cca	ttc	atc	ctg	att	tgg	gga	aac	aag	aag	cta	aag	cag	864
Ser	Thr	His	Pro	Phe	Ile	Leu	Ile	Trp	Gly	Asn	Lys	Lys	Leu	Lys	Gln	
			275				280					285				
act	ttt	ctt	tca	gtt	ttg	tgg	cat	gtg	agg	tac	tgg	gtg	aaa	gga	gag	912
Thr	Phe	Leu	Ser	Val	Leu	Trp	His	Val	Arg	Tyr	Trp	Val	Lys	Gly	Glu	
	290					295					300					
aag	cct	tca	tct	tca	tag											930
Lys	Pro	Ser	Ser	Ser												
305																

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Met	Ile	Thr	Phe	Leu	Pro	Ile	Ile	Phe	Ser	Ile	Leu	Ile	Val	Val	Thr	
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Phe	Val	Ile	Gly	Asn	Phe	Ala	Asn	Gly	Phe	Ile	Ala	Leu	Val	Asn	Ser	
			20					25					30			
Ile	Glu	Trp	Phe	Lys	Arg	Gln	Lys	Ile	Ser	Phe	Ala	Asp	Gln	Ile	Leu	
	35						40					45				
Thr	Ala	Leu	Ala	Val	Ser	Arg	Val	Gly	Leu	Leu	Trp	Val	Leu	Val	Leu	
	50					55					60					
Asn	Trp	Tyr	Ala	Thr	Glu	Leu	Asn	Pro	Ala	Phe	Asn	Ser	Ile	Glu	Val	
65					70					75					80	
Arg	Ile	Thr	Ala	Tyr	Asn	Val	Trp	Ala	Val	Ile	Asn	His	Phe	Ser	Asn	
				85					90					95		
Trp	Leu	Ala	Thr	Ser	Leu	Ser	Ile	Phe	Tyr	Leu	Leu	Lys	Ile	Ala	Asn	
			100					105					110			



Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val  
 115 120 125

Val Leu Val Ile Leu Leu Gly Pro Leu Leu Phe Leu Val Cys His Leu  
 130 135 140

Phe Val Ile Asn Met Asn Gln Ile Ile Trp Thr Lys Glu Tyr Glu Gly  
 145 150 155 160

Asn Met Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr Leu Ser Asn  
 165 170 175

Thr Thr Val Thr Ile Leu Ala Asn Leu Val Pro Phe Thr Leu Thr Leu  
 180 185 190

Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Met Lys Val His  
 210 215 220

Ile Lys Ala Met Gln Thr Val Thr Ser Phe Leu Leu Leu Cys Ala Ile  
 225 230 235 240

Tyr Phe Leu Ser Ile Ile Met Ser Val Trp Ser Phe Glu Ser Leu Glu  
 245 250 255

Asn Lys Pro Val Phe Met Phe Cys Glu Ala Ile Ala Phe Ser Tyr Pro  
 260 265 270

Ser Thr His Pro Phe Ile Leu Ile Trp Gly Asn Lys Lys Leu Lys Gln  
 275 280 285

Thr Phe Leu Ser Val Leu Trp His Val Arg Tyr Trp Val Lys Gly Glu  
 290 295 300

Lys Pro Ser Ser Ser  
 305

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1 5 10 15	
ttt gtg att gga aat ttt gct aat ggc ttc ata gca ttg gta aat tcc	96
Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser	
20 25 30	
att gag tgg ttc aag aga caa aag atc tct ttt gct gac caa att ctc	144
Ile Glu Trp Phe Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu	
35 40 45	
act gct ctg gca gtc tcc aga gtt ggt tta ctc tgg gta tta gta tta	192
Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Val Leu	
50 55 60	
aat tgg tat gca act gag ttg aat cca gct ttt aac agt ata gaa gta	240
Asn Trp Tyr Ala Thr Glu Leu Asn Pro Ala Phe Asn Ser Ile Glu Val	
65 70 75 80	
aga att act gct tac aat gtc tgg gca gta atc aac cat ttc agc aac	288
Arg Ile Thr Ala Tyr Asn Val Trp Ala Val Ile Asn His Phe Ser Asn	
85 90 95	
tgg ctt gct act agc ctc agc ata ttt tat ttg ctc aag att gcc aat	336
Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn	
100 105 110	
ttc tcc aac ctt att ttt ctt cac tta aag agg aga gtt aag agt gtt	384
Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val	
115 120 125	

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gtt ctg gtg ata cta ttg ggg cct ttg cta ttt ttg gtt tgt cat ctt 432  
Val Leu Val Ile Leu Leu Gly Pro Leu Leu Phe Leu Val Cys His Leu  
130 135 140

ttt gtg ata aac atg aat cag att ata tgg aca aaa gaa tat gaa gga 480  
Phe Val Ile Asn Met Asn Gln Ile Ile Trp Thr Lys Glu Tyr Glu Gly  
145 150 155 160

aac atg act tgg aag atc aaa ctg agg agt gca atg tac ctt tca aat 528  
Asn Met Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr Leu Ser Asn  
165 170 175

aca acg gta acc atc cta gca aac tta gtt ccc ttc act ctg acc ctg 576  
Thr Thr Val Thr Ile Leu Ala Asn Leu Val Pro Phe Thr Leu Thr Leu  
180 185 190

ata tct ttt ctg ctg tta atc tgt tct ctg tgt aaa cat ctc aaa aag 624  
Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
195 200 205

atg cag ctc cat ggc aaa gga tct caa gat ccc agc atg aag gtc cac 672  
Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Met Lys Val His  
210 215 220

ata aaa gct ttg caa act gtg acc tcc ttc ctc ttg tta tgt gcc att 720  
Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Leu Leu Cys Ala Ile  
225 230 235 240

tac ttt ctg tcc ata atc atg tca gtt tgg agt ttt gag agt ctg gaa 768  
Tyr Phe Leu Ser Ile Ile Met Ser Val Trp Ser Phe Glu Ser Leu Glu  
245 250 255

aac aaa cct gtc ttc atg ttc tgc gaa gct att gca ttc agc tat cct 816  
Asn Lys Pro Val Phe Met Phe Cys Glu Ala Ile Ala Phe Ser Tyr Pro  
260 265 270

tca acc cac cca ttc atc ctg att tgg gga aac aag aag cta aag cag 864  
Ser Thr His Pro Phe Ile Leu Ile Trp Gly Asn Lys Lys Leu Lys Gln  
275 280 285

act ttt ctt tca gtt ttg tgg cat gtg agg tac tgg gtg aaa gga gag 912  
Thr Phe Leu Ser Val Leu Trp His Val Arg Tyr Trp Val Lys Gly Glu  
290 295 300

aag cct tca tct tca tag 930  
Lys Pro Ser Ser Ser  
305

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Met Ile Thr Phe Leu Pro Ile Ile Phe Ser Ile Leu Ile Val Val Thr  
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20

25

30

Ile Glu Trp Phe Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu  
 35 40 45

Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Val Leu  
 50 55 60

Asn Trp Tyr Ala Thr Glu Leu Asn Pro Ala Phe Asn Ser Ile Glu Val  
 65 70 75 80

Arg Ile Thr Ala Tyr Asn Val Trp Ala Val Ile Asn His Phe Ser Asn  
 85 90 95

Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn  
 100 105 110

Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val  
 115 120 125

Val Leu Val Ile Leu Leu Gly Pro Leu Leu Phe Leu Val Cys His Leu  
 130 135 140

Phe Val Ile Asn Met Asn Gln Ile Ile Trp Thr Lys Glu Tyr Glu Gly  
 145 150 155 160

Asn Met Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr Leu Ser Asn  
 165 170 175

Thr Thr Val Thr Ile Leu Ala Asn Leu Val Pro Phe Thr Leu Thr Leu  
 180 185 190

Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Met Lys Val His  
 210 215 220

Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Leu Leu Cys Ala Ile  
 225 230 235 240

Tyr Phe Leu Ser Ile Ile Met Ser Val Trp Ser Phe Glu Ser Leu Glu  
 245 250 255

Asn Lys Pro Val Phe Met Phe Cys Glu Ala Ile Ala Phe Ser Tyr Pro  
 260 265 270

Ser Thr His Pro Phe Ile Leu Ile Trp Gly Asn Lys Lys Leu Lys Gln  
 275 280 285

Thr Phe Leu Ser Val Leu Trp His Val Arg Tyr Trp Val Lys Gly Glu  
 290 295 300

Lys Pro Ser Ser Ser  
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 Met Ile Thr Phe Leu Pro Ile Ile Phe Ser Ile Leu Ile Val Val Thr  
 1 5 10 15

ttt gtg att gga aat ttt gct aat ggc ttc ata gca ttg gta aat tcc 96  
 Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser  
 20 25 30

att gag tgg ttc aag aga caa aag atc tct ttt gct gac caa att ctc 144  
 Ile Glu Trp Phe Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu  
 35 40 45

act gct ctg gca gtc tcc aga gtt ggt tta ctc tgg gta tta gta tta	192
Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Val Leu	
50 55 60	
aat tgg tat gca act gag ttg aat cca gct ttt aac agt ata gaa gta	240
Asn Trp Tyr Ala Thr Glu Leu Asn Pro Ala Phe Asn Ser Ile Glu Val	
65 70 75 80	
aga att act gct tac aat gtc tgg gca gta atc aac cat ttc agc aac	288
Arg Ile Thr Ala Tyr Asn Val Trp Ala Val Ile Asn His Phe Ser Asn	
85 90 95	
tgg ctt gct act agc ctc agc ata ttt tat ttg ctc aag att gcc aat	336
Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn	
100 105 110	
ttc tcc aac ctt att ttt ctt cac tta aag agg aga gtt aag agt gtt	384
Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val	
115 120 125	
gtt ctg gtg ata cta ttg ggg cct ttg cta ttt ttg gtt tgt cat ctt	432
Val Leu Val Ile Leu Leu Gly Pro Leu Leu Phe Leu Val Cys His Leu	
130 135 140	
ttt gtg ata aac atg aat cag att ata tgg aca aaa gaa tat gaa gga	480
Phe Val Ile Asn Met Asn Gln Ile Ile Trp Thr Lys Glu Tyr Glu Gly	
145 150 155 160	
aac atg act tgg aag atc aaa ctg agg agt gca atg tac ctt tca aat	528
Asn Met Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr Leu Ser Asn	
165 170 175	
aca acg gta acc atc cta gca aac tta gtt ccc ttc act ctg acc ctg	576
Thr Thr Val Thr Ile Leu Ala Asn Leu Val Pro Phe Thr Leu Thr Leu	
180 185 190	
ata tct ttt ctg ctg tta atc tgt tct ctg tgt aaa cat ctc aaa aag	624
Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys	
195 200 205	
atg cag ctc cat ggc aaa gga tct caa gat ccc agc atg aag gtc cac	672
Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Met Lys Val His	
210 215 220	
ata aaa gct ttg caa act gtg acc tcc ttc ctc ttg tta tgt gcc att	720
Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Leu Cys Ala Ile	
225 230 235 240	
tac ttt ctg tcc ata atc atg tca gtt tgg agt ttt gag agt ctg gaa	768
Tyr Phe Leu Ser Ile Ile Met Ser Val Trp Ser Phe Glu Ser Leu Glu	
245 250 255	
aac aaa cct gtc ttc atg ttc tgc gaa gct att gca ttc agc tat cct	816
Asn Lys Pro Val Phe Met Phe Cys Glu Ala Ile Ala Phe Ser Tyr Pro	
260 265 270	
tca acc cac cca ttc atc ctg att tgg gga aac aag aag cta aag tag	864
Ser Thr His Pro Phe Ile Leu Ile Trp Gly Asn Lys Lys Leu Lys	
275 280 285	

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actttttcttt cagttttgtg gcatgtgagg tactgggtga aaggagagaa gccttcatct 924  
tcatag 930

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Met Ile Thr Phe Leu Pro Ile Ile Phe Ser Ile Leu Ile Val Val Thr  
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Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser  
20 25 30

Ile Glu Trp Phe Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu  
35 40 45

Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Val Leu  
50 55 60

Asn Trp Tyr Ala Thr Glu Leu Asn Pro Ala Phe Asn Ser Ile Glu Val  
65 70 75 80

Arg Ile Thr Ala Tyr Asn Val Trp Ala Val Ile Asn His Phe Ser Asn  
85 90 95

Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn  
100 105 110

Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val  
115 120 125

Val Leu Val Ile Leu Leu Gly Pro Leu Leu Phe Leu Val Cys His Leu  
130 135 140

Phe Val Ile Asn Met Asn Gln Ile Ile Trp Thr Lys Glu Tyr Glu Gly  
145 150 155 160

Asn Met Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr Leu Ser Asn  
165 170 175

Thr Thr Val Thr Ile Leu Ala Asn Leu Val Pro Phe Thr Leu Thr Leu  
180 185 190

Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys

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195

200

205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Met Lys Val His  
 210 215 220

Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Leu Leu Cys Ala Ile  
 225 230 235 240

Tyr Phe Leu Ser Ile Ile Met Ser Val Trp Ser Phe Glu Ser Leu Glu  
 245 250 255

Asn Lys Pro Val Phe Met Phe Cys Glu Ala Ile Ala Phe Ser Tyr Pro  
 260 265 270

Ser Thr His Pro Phe Ile Leu Ile Trp Gly Asn Lys Lys Leu Lys  
 275 280 285

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1	5	10	15	
ttt gtg att gga aat ttt gct aat ggc ttc ata gca ttg gta aat tcc Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser 20 25 30				96
att gag tgg gtc aag aga caa aag atc tct ttt gct gac caa att ctc Ile Glu Trp Val Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu 35 40 45				144
act gct ctg gca gtc tcc aga gtt ggt tta ctc tgg gta tta gta tta Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Val Leu 50 55 60				192
aat tgg tat gca act gag ttg aat cca gct ttt aac agt ata gaa gta Asn Trp Tyr Ala Thr Glu Leu Asn Pro Ala Phe Asn Ser Ile Glu Val 65 70 75 80				240
aga att act gct tac aat gtc tgg gca gta atc aac cat ttc agc aac Arg Ile Thr Ala Tyr Asn Val Trp Ala Val Ile Asn His Phe Ser Asn 85 90 95				288
tgg ctt gct act agc ctc agc ata ttt tat ttg ctc aag att gcc aat Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn 100 105 110				336
ttc tcc aac ctt att ttt ctt cac tta aag agg aga gtt aag agt gtt Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val 115 120 125				384
gtt ctg gtg ata cta ttg ggg cct ttg cta ttt ttg gtt tgt cat ctt Val Leu Val Ile Leu Leu Gly Pro Leu Leu Phe Leu Val Cys His Leu 130 135 140				432
ttt gtg ata aac atg aat cag att ata tgg aca aaa gaa tat gaa gga Phe Val Ile Asn Met Asn Gln Ile Ile Trp Thr Lys Glu Tyr Glu Gly 145 150 155 160				480
aac atg act tgg aag atc aaa ctg agg agt gca atg tac ctt tca aat Asn Met Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr Leu Ser Asn 165 170 175				528
aca acg gta acc atc cta gca aac tta gtt ccc ttc act ctg acc ctg Thr Thr Val Thr Ile Leu Ala Asn Leu Val Pro Phe Thr Leu Thr Leu 180 185 190				576
ata tct ttt ctg ctg tta atc tgt tct ctg tgt aaa cat ctc aaa aag Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys 195 200 205				624
atg cag ctc cat ggc aaa gga tct caa gat ccc agc atg aag gtc cac Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Met Lys Val His 210 215 220				672
ata aaa gct atg caa act gtg acc tcc ttc ctc ttg tta tgt gcc att Ile Lys Ala Met Gln Thr Val Thr Ser Phe Leu Leu Cys Ala Ile 225 230 235 240				720
tac ttt ctg tcc ata atc atg tca gtt tag agttttgaga gtctggaaaa Tyr Phe Leu Ser Ile Ile Met Ser Val 245				770

caaacctgtc ttcatgttct gcgaagctat tgcattcagc tatecttcaa cccacccatt 830  
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 gaggtactgg gtgaaaggag agaagccttc atcttcatag 930

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<400> 212

Met Ile Thr Phe Leu Pro Ile Ile Phe Ser Ile Leu Ile Val Val Thr  
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 20 25 30  
 Ile Glu Trp Val Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Leu  
 35 40 45  
 Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Val Leu  
 50 55 60  
 Asn Trp Tyr Ala Thr Glu Leu Asn Pro Ala Phe Asn Ser Ile Glu Val  
 65 70 75 80  
 Arg Ile Thr Ala Tyr Asn Val Trp Ala Val Ile Asn His Phe Ser Asn  
 85 90 95  
 Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn  
 100 105 110  
 Phe Ser Asn Leu Ile Phe Leu His Leu Lys Arg Arg Val Lys Ser Val  
 115 120 125  
 Val Leu Val Ile Leu Leu Gly Pro Leu Leu Phe Leu Val Cys His Leu  
 130 135 140  
 Phe Val Ile Asn Met Asn Gln Ile Ile Trp Thr Lys Glu Tyr Glu Gly  
 145 150 155 160  
 Asn Met Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr Leu Ser Asn  
 165 170 175  
 Thr Thr Val Thr Ile Leu Ala Asn Leu Val Pro Phe Thr Leu Thr Leu  
 180 185 190

Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Met Lys Val His  
 210 215 220

Ile Lys Ala Met Gln Thr Val Thr Ser Phe Leu Leu Leu Cys Ala Ile  
 225 230 235 240

Tyr Phe Leu Ser Ile Ile Met Ser Val  
 245

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 1 5 10 15  
 ttt gtt att gga aat ttt gct aat ggc ttc ata gca ttg gta aat tcc 96  
 Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser  
 20 25 30  
 att gag tgg gtc aag aga caa aag atc tcc ttt gtt gac caa att ctc 144  
 Ile Glu Trp Val Lys Arg Gln Lys Ile Ser Phe Val Asp Gln Ile Leu  
 35 40 45  
 act gct ctg gcg gtc tcc aga gtt ggt ttg ctc tgg gtg tta tta cta 192  
 Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu  
 50 55 60  
 cat tgg tat gca act cag ttg aat cca gct ttt tat agt gta gaa gta 240

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His 65	Trp	Tyr	Ala	Thr	Gln 70	Leu	Asn	Pro	Ala	Phe 75	Tyr	Ser	Val	Glu	Val 80	
aga Arg	att Ile	act Thr	gct Ala	tat Tyr	aat Asn	gtc Val	tgg Trp	gca Ala	gta Val	acc Thr	aac Asn	cat His	ttc Phe	agc Ser	agc Ser	288
tgg Trp	ctt Leu	gct Ala	act Thr	agc Ser	ctc Leu	agc Ser	atg Met	ttt Phe	tat Tyr	ttg Leu	ctc Leu	agg Arg	att Ile	gcc Ala	aat Asn	336
ttc Phe	tcc Ser	aac Asn	ctt Leu	att Ile	ttt Phe	ctt Leu	cgc Arg	ata Ile	aag Lys	agg Arg	aga Arg	gtt Val	aag Lys	agt Ser	gtt Val	384
gtt Val	ctg Leu	gtg Val	ata Ile	ctg Leu	ttg Leu	ggg Gly	cct Pro	ttg Leu	cta Leu	ttt Phe	ttg Leu	gtt Val	tgt Cys	cat His	ctt Leu	432
ttt Phe	gtg Val	ata Ile	aac Asn	atg Met	gat Asp	gag Glu	act Thr	gta Val	tgg Trp	aca Thr	aaa Lys	gaa Glu	tat Tyr	gaa Glu	gga Gly	480
aac Asn	gtg Val	act Thr	tgg Trp	aag Lys	atc Ile	aaa Lys	ttg Leu	agg Arg	agt Ser	gca Ala	atg Met	tac Tyr	cat His	tca Ser	aat Asn	528
atg Met	act Thr	cta Leu	acc Thr	atg Met	cta Leu	gca Ala	aac Asn	ttt Phe	gta Val	ccc Pro	ctc Leu	act Thr	ctg Leu	acc Thr	ctg Leu	576
ata Ile	tct Ser	ttt Phe	ctg Leu	ctg Leu	tta Leu	atc Ile	tgt Cys	tct Ser	ctg Leu	tgt Cys	aaa Lys	cat His	ctc Leu	aag Lys	aag Lys	624
atg Met	cag Gln	ctc Leu	cat His	ggc Gly	aaa Lys	gga Gly	tct Ser	caa Gln	gat Asp	ccc Pro	agc Ser	acc Thr	aag Lys	gtc Val	cac His	672
ata Ile	aaa Lys	gct Ala	ttg Leu	caa Gln	act Thr	gtg Val	acc Thr	tcc Ser	ttt Phe	ctt Leu	ctg Leu	tta Leu	tgt Cys	gcc Ala	att Ile	720
tac Tyr	ttt Phe	ctg Leu	tcc Ser	atg Met	atc Ile	ata Ile	tca Ser	gtt Val	tgt Cys	aat Asn	ttg Leu	ggg Gly	agg Arg	ctg Leu	gaa Glu	768
aag Lys	caa Gln	cct Pro	gtc Val	ttc Phe	atg Met	ttc Phe	tgc Cys	caa Gln	gct Ala	att Ile	ata Ile	ttc Phe	agc Ser	tat Tyr	cct Pro	816
tca Ser	acc Thr	cac His	cca Pro	ttc Phe	atc Ile	ctg Leu	att Ile	ttg Leu	gga Gly	aac Asn	aag Lys	aag Lys	cta Leu	aag Lys	cag Gln	864
att Ile	ttt Phe	ctt Leu	tca Ser	gtt Val	ttg Leu	cgg Arg	cat His	gtg Val	agg Arg	tac Tyr	tgg Trp	gtg Val	aaa Lys	gac Asp	aga Arg	912
agc Ser	ctt Leu	cgt Arg	ctc Leu	cat His	aga Arg	ttc Phe	aca Thr	aga Arg	ggg Gly	gca Ala	ttg Leu	tgt Cys	gtc Val	ttc Phe	tag	960

305

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315

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 20 25 30

Ile Glu Trp Val Lys Arg Gln Lys Ile Ser Phe Val Asp Gln Ile Leu  
 35 40 45

Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu  
 50 55 60

His Trp Tyr Ala Thr Gln Leu Asn Pro Ala Phe Tyr Ser Val Glu Val  
 65 70 75 80

Arg Ile Thr Ala Tyr Asn Val Trp Ala Val Thr Asn His Phe Ser Ser  
 85 90 95

Trp Leu Ala Thr Ser Leu Ser Met Phe Tyr Leu Leu Arg Ile Ala Asn  
 100 105 110

Phe Ser Asn Leu Ile Phe Leu Arg Ile Lys Arg Arg Val Lys Ser Val  
 115 120 125

Val Leu Val Ile Leu Leu Gly Pro Leu Leu Phe Leu Val Cys His Leu  
 130 135 140

Phe Val Ile Asn Met Asp Glu Thr Val Trp Thr Lys Glu Tyr Glu Gly  
 145 150 155 160

Asn Val Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr His Ser Asn  
 165 170 175

Met Thr Leu Thr Met Leu Ala Asn Phe Val Pro Leu Thr Leu Thr Leu  
 180 185 190

Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

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Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His  
 210 215 220

Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Leu Leu Cys Ala Ile  
 225 230 235 240

Tyr Phe Leu Ser Met Ile Ile Ser Val Cys Asn Leu Gly Arg Leu Glu  
 245 250 255

Lys Gln Pro Val Phe Met Phe Cys Gln Ala Ile Ile Phe Ser Tyr Pro  
 260 265 270

Ser Thr His Pro Phe Ile Leu Ile Leu Gly Asn Lys Lys Leu Lys Gln  
 275 280 285

Ile Phe Leu Ser Val Leu Arg His Val Arg Tyr Trp Val Lys Asp Arg  
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Ser Leu Arg Leu His Arg Phe Thr Arg Gly Ala Leu Cys Val Phe  
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 1 5 10 15

ttt gtt att gga aat ttt gct aat ggc ttc ata gca ttg gta aat tcc 96  
 Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser

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20						25						30						
att Ile	gag Glu	tgg Trp 35	gtc Val	aag Lys	aga Arg	caa Gln	aag Lys 40	atc Ile	tcc Ser	ttt Phe	gtt Val	gac Asp 45	caa Gln	att Ile	ctc Leu	144		
act Thr	gct Ala 50	ctg Leu	gcg Ala	gtc Val	tcc Ser	aga Arg 55	ggt Val	ggg Gly	ttg Leu	ctc Leu	tgg Trp 60	gtg Val	tta Leu	tta Leu	cta Leu	192		
cat His 65	tgg Trp	tat Tyr	gca Ala	act Thr	cag Gln 70	ttg Leu	aat Asn	cca Pro	gct Ala	ttt Phe 75	tat Tyr	agt Ser	gta Val	gaa Glu	gta Val 80	240		
aga Arg	att Ile	act Thr	gct Ala	tat Tyr 85	aat Asn	gtc Val	tgg Trp	gca Ala	gta Val 90	acc Thr	aac Asn	cat His	ttc Phe	agc Ser 95	agc Ser	288		
tgg Trp	ctt Leu	gct Ala	act Thr 100	agc Ser	ctc Leu	agc Ser	atg Met	ttt Phe 105	tat Tyr	ttg Leu	ctc Leu	agg Arg	att Ile 110	gcc Ala	aat Asn	336		
ttc Phe	tcc Ser	aac Asn 115	ctt Leu	att Ile	ttt Phe	ctt Leu	cgc Arg 120	ata Ile	aag Lys	agg Arg	aga Arg	gtt Val 125	aag Lys	agt Ser	gtt Val	384		
gtt Val	ctg Leu 130	gtg Val	ata Ile	ctg Leu	ttg Leu	ggg Gly 135	cct Pro	ttg Leu	cta Leu	ttt Phe	ttg Leu 140	gtt Val	tgt Cys	cat His	ctt Leu	432		
ttt Phe 145	gtg Val	ata Ile	aac Asn	atg Met 150	gat Asp	gag Glu	act Thr	gta Val	tgg Trp	aca Thr 155	aaa Lys	gaa Glu	tat Tyr	gaa Glu	gga Gly 160	480		
aac Asn	gtg Val	act Thr	tgg Trp	aag Lys 165	atc Ile	aaa Lys	ttg Leu	agg Arg	agt Ser 170	gca Ala	atg Met	tac Tyr	cat His	tca Ser 175	aat Asn	528		
atg Met	act Thr	cta Leu	acc Thr 180	atg Met	cta Leu	gca Ala	aac Asn	ttt Phe 185	gta Val	ccc Pro	ctc Leu	act Thr	ctg Leu 190	acc Thr	ctg Leu	576		
ata Ile	tct Ser	ttt Phe 195	ctg Leu	ctg Leu	tta Leu	atc Ile	tgt Cys 200	tct Ser	ctg Leu	tgt Cys	aaa Lys	cat His 205	ctc Leu	aag Lys	aag Lys	624		
atg Met	cag Gln 210	ctc Leu	cat His	ggc Gly	aaa Lys	gga Gly 215	tct Ser	caa Gln	gat Asp	ccc Pro	agc Ser 220	acc Thr	aag Lys	gtc Val	cac His	672		
ata Ile 225	aaa Lys	gct Ala	ttg Leu	caa Gln	act Thr 230	gtg Val	acc Thr	tcc Ser	ttt Phe	ctt Leu 235	ctg Leu	tta Leu	tgt Cys	gcc Ala	att Ile 240	720		
tac Tyr	ttt Phe	ctg Leu	tcc Ser	atg Met 245	atc Ile	ata Ile	tca Ser	gtt Val	tgt Cys 250	aat Asn	ttt Phe	ggg Gly	agg Arg	ctg Leu 255	gaa Glu	768		
aag Lys	caa Gln	cct Pro	gtc Val 260	ttc Phe	atg Met	ttc Phe	tgc Cys	caa Gln 265	gct Ala	att Ile	ata Ile	ttc Phe	agc Ser 270	tat Tyr	cct Pro	816		

tca acc cac cca ttc atc ctg att ttg gga aac aag aag cta aag cag 864  
 Ser Thr His Pro Phe Ile Leu Ile Leu Gly Asn Lys Lys Leu Lys Gln  
 275 280 285

att ttt ctt tca gtt ttg cgg cat gtg agg tac tgg gtg aaa gac aga 912  
 Ile Phe Leu Ser Val Leu Arg His Val Arg Tyr Trp Val Lys Asp Arg  
 290 295 300

agc ctt cgt ctc cat aga ttc aca aga ggg gca ttg tgt gtc ttc tag 960  
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<212> PRT

<213> homo sapiens

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 20 25 30

Ile Glu Trp Val Lys Arg Gln Lys Ile Ser Phe Val Asp Gln Ile Leu  
 35 40 45

Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu  
 50 55 60

His Trp Tyr Ala Thr Gln Leu Asn Pro Ala Phe Tyr Ser Val Glu Val  
 65 70 75 80

Arg Ile Thr Ala Tyr Asn Val Trp Ala Val Thr Asn His Phe Ser Ser  
 85 90 95

Trp Leu Ala Thr Ser Leu Ser Met Phe Tyr Leu Leu Arg Ile Ala Asn  
 100 105 110

Phe Ser Asn Leu Ile Phe Leu Arg Ile Lys Arg Arg Val Lys Ser Val  
 115 120 125

Val Leu Val Ile Leu Leu Gly Pro Leu Leu Phe Leu Val Cys His Leu  
 130 135 140

Phe Val Ile Asn Met Asp Glu Thr Val Trp Thr Lys Glu Tyr Glu Gly  
 145 150 155 160



Asn Val Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr His Ser Asn  
 165 170 175  
 Met Thr Leu Thr Met Leu Ala Asn Phe Val Pro Leu Thr Leu Thr Leu  
 180 185 190  
 Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205  
 Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His  
 210 215 220  
 Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Leu Leu Cys Ala Ile  
 225 230 235 240  
 Tyr Phe Leu Ser Met Ile Ile Ser Val Cys Asn Phe Gly Arg Leu Glu  
 245 250 255  
 Lys Gln Pro Val Phe Met Phe Cys Gln Ala Ile Ile Phe Ser Tyr Pro  
 260 265 270  
 Ser Thr His Pro Phe Ile Leu Ile Leu Gly Asn Lys Lys Leu Lys Gln  
 275 280 285  
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ttt gtt att gga aat ttt gct aat ggc ttc ata gca ttg gta aat tcc	96
Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser	
20 25 30	
att gag tgg gtc aag aga caa aag atc tcc ttt gtt gac caa att ctc	144
Ile Glu Trp Val Lys Arg Gln Lys Ile Ser Phe Val Asp Gln Ile Leu	
35 40 45	
act gct ctg gcg gtc tcc aga gtt ggt ttg ctc tgg gtg tta tta cta	192
Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu	
50 55 60	
cat tgg tat gca act cag ttg aat cca gct ttt tat agt gta gaa gta	240
His Trp Tyr Ala Thr Gln Leu Asn Pro Ala Phe Tyr Ser Val Glu Val	
65 70 75 80	
aga att act gct tat aat gtc tgg gca gta acc aac cat ttc agc agc	288
Arg Ile Thr Ala Tyr Asn Val Trp Ala Val Thr Asn His Phe Ser Ser	
85 90 95	
tgg ctt gct act agc ctc agc atg ttt tat ttg ctc agg att gcc aat	336
Trp Leu Ala Thr Ser Leu Ser Met Phe Tyr Leu Leu Arg Ile Ala Asn	
100 105 110	
ttc tcc aac ctt att ttt ctt cgc ata aag agg aga gtt aag agt gtt	384
Phe Ser Asn Leu Ile Phe Leu Arg Ile Lys Arg Arg Val Lys Ser Val	
115 120 125	
gtt ctg gtg ata ctg ttg ggg cct ttg cta ttt ttg gtt tgt cat ctt	432
Val Leu Val Ile Leu Leu Gly Pro Leu Leu Phe Leu Val Cys His Leu	
130 135 140	
ttt gtg ata aac atg gat gag act gta tgg aca aaa gaa tat gaa gga	480
Phe Val Ile Asn Met Asp Glu Thr Val Trp Thr Lys Glu Tyr Glu Gly	
145 150 155 160	
aac gtg act tgg aag atc aaa ttg agg agt gca atg tac cat tca aat	528
Asn Val Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr His Ser Asn	
165 170 175	
atg act cta acc atg cta gca aac ttt gta ccc ctc act ctg acc ctg	576
Met Thr Leu Thr Met Leu Ala Asn Phe Val Pro Leu Thr Leu Thr Leu	
180 185 190	
gta tct ttt ctg ctg tta atc tgt tct ctg tgt aaa cat ctc aag aag	624
Val Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys	
195 200 205	
atg cag ctc cat ggc aaa gga tct caa gat ccc agc acc aag gtc cac	672
Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His	
210 215 220	

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ata aaa gct ttg caa act gtg acc tcc ttt ctt ctg tta tgt gcc att	720
Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Leu Leu Cys Ala Ile	
225 230 235 240	
tac ttt ctg tcc atg atc ata tca gtt tgt aat ttg ggg agg ctg gaa	768
Tyr Phe Leu Ser Met Ile Ile Ser Val Cys Asn Leu Gly Arg Leu Glu	
245 250 255	
aag caa cct gtc ttc atg ttc tgc caa gct att ata ttc agc tat cct	816
Lys Gln Pro Val Phe Met Phe Cys Gln Ala Ile Ile Phe Ser Tyr Pro	
260 265 270	
tca acc cac cca ttc atc ctg att ttg gga aac aag aag cta aag cag	864
Ser Thr His Pro Phe Ile Leu Ile Leu Gly Asn Lys Lys Leu Lys Gln	
275 280 285	
att ttt ctt tca gtt ttg cgg cat gtg agg tac tgg gtg aaa gac aga	912
Ile Phe Leu Ser Val Leu Arg His Val Arg Tyr Trp Val Lys Asp Arg	
290 295 300	
agc ctt cgt ctc cat aga ttc aca aga ggg gca ttg tgt gtc ttc tag	960
Ser Leu Arg Leu His Arg Phe Thr Arg Gly Ala Leu Cys Val Phe	
305 310 315	

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Ile Glu Trp Val Lys Arg Gln Lys Ile Ser Phe Val Asp Gln Ile Leu	
35 40 45	
Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu	
50 55 60	
His Trp Tyr Ala Thr Gln Leu Asn Pro Ala Phe Tyr Ser Val Glu Val	
65 70 75 80	
Arg Ile Thr Ala Tyr Asn Val Trp Ala Val Thr Asn His Phe Ser Ser	
85 90 95	
Trp Leu Ala Thr Ser Leu Ser Met Phe Tyr Leu Leu Arg Ile Ala Asn	
100 105 110	
Phe Ser Asn Leu Ile Phe Leu Arg Ile Lys Arg Arg Val Lys Ser Val	

115

120

125

Val Leu Val Ile Leu Leu Gly Pro Leu Leu Phe Leu Val Cys His Leu  
 130 135 140

Phe Val Ile Asn Met Asp Glu Thr Val Trp Thr Lys Glu Tyr Glu Gly  
 145 150 155 160

Asn Val Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr His Ser Asn  
 165 170 175

Met Thr Leu Thr Met Leu Ala Asn Phe Val Pro Leu Thr Leu Thr Leu  
 180 185 190

Val Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His  
 210 215 220

Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Leu Leu Cys Ala Ile  
 225 230 235 240

Tyr Phe Leu Ser Met Ile Ile Ser Val Cys Asn Leu Gly Arg Leu Glu  
 245 250 255

Lys Gln Pro Val Phe Met Phe Cys Gln Ala Ile Ile Phe Ser Tyr Pro  
 260 265 270

Ser Thr His Pro Phe Ile Leu Ile Leu Gly Asn Lys Lys Leu Lys Gln  
 275 280 285

Ile Phe Leu Ser Val Leu Arg His Val Arg Tyr Trp Val Lys Asp Arg  
 290 295 300

Ser Leu Arg Leu His Arg Phe Thr Arg Gly Ala Leu Cys Val Phe  
 305 310 315

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 1 5 10 15

ttt gtt att gga aat ttt gct aat ggc ttc ata gca ttg gta aat tcc 96  
 Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser  
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att gag tgg gtc aag aga caa aag atc tcc ttt gtt gac caa att ctc 144  
 Ile Glu Trp Val Lys Arg Gln Lys Ile Ser Phe Val Asp Gln Ile Leu  
 35 40 45

act gct ctg gcg gtc tcc aga gtt ggt ttg ctc tgg gtg tta tta cta 192  
 Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu Leu  
 50 55 60

cat tgg tat gca act cag ttg aat cca gct ttt tat agt gta gaa gta 240  
 His Trp Tyr Ala Thr Gln Leu Asn Pro Ala Phe Tyr Ser Val Glu Val  
 65 70 75 80

aga att act gct tat aat gtc tgg gca gta acc aac cat ttc agc agc 288  
 Arg Ile Thr Ala Tyr Asn Val Trp Ala Val Thr Asn His Phe Ser Ser  
 85 90 95

tgg ctt gct act agc ctc agc atg ttt tat ttg ctc agg att gcc aat 336  
 Trp Leu Ala Thr Ser Leu Ser Met Phe Tyr Leu Leu Arg Ile Ala Asn  
 100 105 110

ttc tcc aac ctt att ttt ctt cgc ata aag agg aga gtt aag agt gtt 384  
 Phe Ser Asn Leu Ile Phe Leu Arg Ile Lys Arg Arg Val Lys Ser Val  
 115 120 125

gtt ctg gtg ata ctg ttg ggg cct ttg cta ttt ttg gtt tgt cat ctt 432  
 Val Leu Val Ile Leu Leu Gly Pro Leu Leu Phe Leu Val Cys His Leu  
 130 135 140

ttt gtg ata aac atg gat gag act gta tgg aca aaa gaa tat gaa gga 480  
 Phe Val Ile Asn Met Asp Glu Thr Val Trp Thr Lys Glu Tyr Glu Gly  
 145 150 155 160

aac gtg act tgg aag atc aaa ttg agg agt gca atg tac cgt tca aat 528  
 Asn Val Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr Arg Ser Asn  
 165 170 175

atg act cta acc atg cta gca aac ttt gta ccc ctc act ctg acc ctg 576

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Met	Thr	Leu	Thr	Met	Leu	Ala	Asn	Phe	Val	Pro	Leu	Thr	Leu	Thr	Leu	
			180					185					190			
ata	tct	ttt	ctg	ctg	tta	atc	tgt	tct	ctg	tgt	aaa	cat	ctc	aag	aag	624
Ile	Ser	Phe	Leu	Leu	Leu	Ile	Cys	Ser	Leu	Cys	Lys	His	Leu	Lys	Lys	
		195					200					205				
atg	cag	ctc	cat	ggc	aaa	gga	tct	caa	gat	ccc	agc	acc	aag	gtc	cac	672
Met	Gln	Leu	His	Gly	Lys	Gly	Ser	Gln	Asp	Pro	Ser	Thr	Lys	Val	His	
	210					215					220					
ata	aaa	gct	ttg	caa	act	gtg	acc	tcc	ttt	ctt	ctg	tta	tgt	gcc	att	720
Ile	Lys	Ala	Leu	Gln	Thr	Val	Thr	Ser	Phe	Leu	Leu	Leu	Cys	Ala	Ile	
225					230					235					240	
tac	ttt	ctg	tcc	atg	atc	ata	tca	gtt	tgt	aat	ttg	ggg	agg	ctg	gaa	768
Tyr	Phe	Leu	Ser	Met	Ile	Ile	Ser	Val	Cys	Asn	Leu	Gly	Arg	Leu	Glu	
				245					250					255		
aag	caa	cct	gtc	ttc	atg	ttc	tgc	caa	gct	att	ata	ttc	agc	tat	cct	816
Lys	Gln	Pro	Val	Phe	Met	Phe	Cys	Gln	Ala	Ile	Ile	Phe	Ser	Tyr	Pro	
			260					265					270			
tca	acc	cac	cca	ttc	atc	ctg	att	ttg	gga	aac	aag	aag	cta	aag	cag	864
Ser	Thr	His	Pro	Phe	Ile	Leu	Ile	Leu	Gly	Asn	Lys	Lys	Leu	Lys	Gln	
			275				280						285			
att	ttt	ctt	tca	gtt	ttg	cgg	cat	gtg	agg	tac	tgg	gtg	aaa	gac	aga	912
Ile	Phe	Leu	Ser	Val	Leu	Arg	His	Val	Arg	Tyr	Trp	Val	Lys	Asp	Arg	
	290					295					300					
agc	ctt	cgt	ctc	cat	aga	ttc	aca	aga	ggg	gca	ttg	tgt	gtc	ttc	tag	960
Ser	Leu	Arg	Leu	His	Arg	Phe	Thr	Arg	Gly	Ala	Leu	Cys	Val	Phe		
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Phe	Val	Ile	Gly	Asn	Phe	Ala	Asn	Gly	Phe	Ile	Ala	Leu	Val	Asn	Ser	
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Ile	Glu	Trp	Val	Lys	Arg	Gln	Lys	Ile	Ser	Phe	Val	Asp	Gln	Ile	Leu	
	35						40					45				
Thr	Ala	Leu	Ala	Val	Ser	Arg	Val	Gly	Leu	Leu	Trp	Val	Leu	Leu	Leu	
	50					55					60					
His	Trp	Tyr	Ala	Thr	Gln	Leu	Asn	Pro	Ala	Phe	Tyr	Ser	Val	Glu	Val	
65					70					75					80	

Arg Ile Thr Ala Tyr Asn Val Trp Ala Val Thr Asn His Phe Ser Ser  
                                   85                                  90                                  95

Trp Leu Ala Thr Ser Leu Ser Met Phe Tyr Leu Leu Arg Ile Ala Asn  
                                   100                                  105                                  110

Phe Ser Asn Leu Ile Phe Leu Arg Ile Lys Arg Arg Val Lys Ser Val  
                                   115                                  120                                  125

Val Leu Val Ile Leu Leu Gly Pro Leu Leu Phe Leu Val Cys His Leu  
                                   130                                  135                                  140

Phe Val Ile Asn Met Asp Glu Thr Val Trp Thr Lys Glu Tyr Glu Gly  
                                   145                                  150                                  155                                  160

Asn Val Thr Trp Lys Ile Lys Leu Arg Ser Ala Met Tyr Arg Ser Asn  
                                   165                                  170                                  175

Met Thr Leu Thr Met Leu Ala Asn Phe Val Pro Leu Thr Leu Thr Leu  
                                   180                                  185                                  190

Ile Ser Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
                                   195                                  200                                  205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His  
                                   210                                  215                                  220

Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Leu Leu Cys Ala Ile  
                                   225                                  230                                  235                                  240

Tyr Phe Leu Ser Met Ile Ile Ser Val Cys Asn Leu Gly Arg Leu Glu  
                                   245                                  250                                  255

Lys Gln Pro Val Phe Met Phe Cys Gln Ala Ile Ile Phe Ser Tyr Pro  
                                   260                                  265                                  270

Ser Thr His Pro Phe Ile Leu Ile Leu Gly Asn Lys Lys Leu Lys Gln  
                                   275                                  280                                  285

Ile Phe Leu Ser Val Leu Arg His Val Arg Tyr Trp Val Lys Asp Arg  
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Ser Leu Arg Leu His Arg Phe Thr Arg Gly Ala Leu Cys Val Phe  
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ttt gtt ctt gga aat gtt gcc aat ggc ttc ata gcc cta gta aat gtc Phe Val Leu Gly Asn Val Ala Asn Gly Phe Ile Ala Leu Val Asn Val 20 25 30	96
att gac tgg gtt aac aca cga aag atc tcc tca gct gag caa att ctc Ile Asp Trp Val Asn Thr Arg Lys Ile Ser Ser Ala Glu Gln Ile Leu 35 40 45	144
act gct ctg gtg gtc tcc aga att ggt tta ctc tgg gtc atg tta ttc Thr Ala Leu Val Val Ser Arg Ile Gly Leu Leu Trp Val Met Leu Phe 50 55 60	192
ctt tgg tat gca act gtg ttt aat tct gct tta tat ggt tta gaa gta Leu Trp Tyr Ala Thr Val Phe Asn Ser Ala Leu Tyr Gly Leu Glu Val 65 70 75 80	240
aga att gtt gct tct aat gcc tgg gct gta acg aac cat ttc agc atg Arg Ile Val Ala Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Met 85 90 95	288
tgg ctt gct gct agc ctc agc ata ttt tgt ttg ctc aag att gcc aat Trp Leu Ala Ala Ser Leu Ser Ile Phe Cys Leu Leu Lys Ile Ala Asn 100 105 110	336
ttc tcc aac ctt att tct ctc cac cta aag aag aga att aag agt gtt Phe Ser Asn Leu Ile Ser Leu His Leu Lys Lys Arg Ile Lys Ser Val 115 120 125	384
gtt ctg gtg ata ctg ttg ggg ccc ttg gta ttt ttg att tgt aat ctt Val Leu Val Ile Leu Leu Gly Pro Leu Val Phe Leu Ile Cys Asn Leu 130 135 140	432
gct gtg ata acc atg gat gag aga gtg tgg aca aaa gaa tat gaa gga Ala Val Ile Thr Met Asp Glu Arg Val Trp Thr Lys Glu Tyr Glu Gly 145 150 155 160	480
aat gtg act tgg aag atc aaa ttg agg aat gca ata cac ctt tca agc Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Ile His Leu Ser Ser 165 170 175	528
ttg act gta act act cta gca aac ctc ata ccc ttt act ctg agc cta Leu Thr Val Thr Thr Leu Ala Asn Leu Ile Pro Phe Thr Leu Ser Leu 180 185 190	576
ata tgt ttt ctg ctg tta atc tgt tct ctt tgt aaa cat ctc aag aag Ile Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys 195 200 205	624
atg cgg ctc cat agc aaa gga tct caa gat ccc agc acc aag gtc cat Met Arg Leu His Ser Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His 210 215 220	672
ata aaa gct ttg caa act gtg acc tcc ttc ctc atg tta ttt gcc att Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Met Leu Phe Ala Ile 225 230 235 240	720
tac ttt ctg tgt ata atc aca tca act tgg aat ctt agg aca cag cag Tyr Phe Leu Cys Ile Ile Thr Ser Thr Trp Asn Leu Arg Thr Gln Gln 245 250 255	768
agc aaa ctt gta ctc ctg ctt tgc caa act gtt gca atc atg tat cct	816

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Ser Lys Leu Val Leu Leu Leu Cys Gln Thr Val Ala Ile Met Tyr Pro  
 260 265 270

tca ttc cac tca ttc atc ctg att atg gga agt agg aag cta aaa cag 864  
 Ser Phe His Ser Phe Ile Leu Ile Met Gly Ser Arg Lys Leu Lys Gln  
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Ile Asp Trp Val Asn Thr Arg Lys Ile Ser Ser Ala Glu Gln Ile Leu  
 35 40 45

Thr Ala Leu Val Val Ser Arg Ile Gly Leu Leu Trp Val Met Leu Phe  
 50 55 60

Leu Trp Tyr Ala Thr Val Phe Asn Ser Ala Leu Tyr Gly Leu Glu Val  
 65 70 75 80

Arg Ile Val Ala Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Met  
 85 90 95

Trp Leu Ala Ala Ser Leu Ser Ile Phe Cys Leu Leu Lys Ile Ala Asn  
 100 105 110

Phe Ser Asn Leu Ile Ser Leu His Leu Lys Lys Arg Ile Lys Ser Val  
 115 120 125

Val Leu Val Ile Leu Leu Gly Pro Leu Val Phe Leu Ile Cys Asn Leu  
 130 135 140

Ala Val Ile Thr Met Asp Glu Arg Val Trp Thr Lys Glu Tyr Glu Gly  
 145 150 155 160

Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Ile His Leu Ser Ser  
 165 170 175

Leu Thr Val Thr Thr Leu Ala Asn Leu Ile Pro Phe Thr Leu Ser Leu  
 180 185 190

Ile Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

Met Arg Leu His Ser Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His  
 210 215 220

Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Met Leu Phe Ala Ile  
 225 230 235 240

Tyr Phe Leu Cys Ile Ile Thr Ser Thr Trp Asn Leu Arg Thr Gln Gln  
 245 250 255

Ser Lys Leu Val Leu Leu Leu Cys Gln Thr Val Ala Ile Met Tyr Pro  
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ttt gtt ctt gga aat gtt gcc aat ggc ttc ata gcc cta gta aat gtc		96
Phe Val Leu Gly Asn Val Ala Asn Gly Phe Ile Ala Leu Val Asn Val		
20 25 30		
att gac tgg gtt aac aca cga aag atc tcc tca gct gag caa att ctc		144
Ile Asp Trp Val Asn Thr Arg Lys Ile Ser Ser Ala Glu Gln Ile Leu		
35 40 45		
act gct ctg gtg gtc tcc aga att ggt tta ctc tgg gtc atg tta ttc		192
Thr Ala Leu Val Val Ser Arg Ile Gly Leu Leu Trp Val Met Leu Phe		
50 55 60		
ctt tgg tat gca act gtg ttt aat tct gct tta tat ggt tta gaa gta		240
Leu Trp Tyr Ala Thr Val Phe Asn Ser Ala Leu Tyr Gly Leu Glu Val		
65 70 75 80		
aga att gtt gct tct aat gcc tgg gct gta acg aac cat ttc agc atg		288
Arg Ile Val Ala Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Met		
85 90 95		
tgg ctt gct gct agc ctc agc ata ttt tgt ttg ctc aag att gcc aat		336
Trp Leu Ala Ala Ser Leu Ser Ile Phe Cys Leu Leu Lys Ile Ala Asn		
100 105 110		
ttc tcc aac ctt att tct ctc cac cta aag aag aga att aag agt gtt		384
Phe Ser Asn Leu Ile Ser Leu His Leu Lys Lys Arg Ile Lys Ser Val		
115 120 125		

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gtt ctg gtg ata ctg ttg ggg ccc ttg gta ttt ttg att tgt aat ctt 432  
Val Leu Val Ile Leu Leu Gly Pro Leu Val Phe Leu Ile Cys Asn Leu  
130 135 140

gct gtg ata acc atg gat gag aga gtg tgg aca aaa gaa tat gaa gga 480  
Ala Val Ile Thr Met Asp Glu Arg Val Trp Thr Lys Glu Tyr Glu Gly  
145 150 155 160

aat gtg act tgg aag atc aaa ttg agg aat gca ata cac ctt tca agc 528  
Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Ile His Leu Ser Ser  
165 170 175

ttg act gta act act cta gca aac ctc ata ccc ttt act ctg agc cta 576  
Leu Thr Val Thr Thr Leu Ala Asn Leu Ile Pro Phe Thr Leu Ser Leu  
180 185 190

ata tgt ttt ctg ctg tta atc tgt tct ctt tgt aaa cat ctc aag aag 624  
Ile Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
195 200 205

atg cgg ctc cat agc aaa gga tct caa gat ccc agc acc aag gtc cat 672  
Met Arg Leu His Ser Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His  
210 215 220

ata aaa gct ttg caa act gtg acc tcc ttc ctc atg tta ttt gcc att 720  
Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Met Leu Phe Ala Ile  
225 230 235 240

tac ttt ctg tgt ata atc aca tca act tgg aat ctt agg aca cag cag 768  
Tyr Phe Leu Cys Ile Ile Thr Ser Thr Trp Asn Leu Arg Thr Gln Gln  
245 250 255

agc aaa ctt gta ctc ctg ctt tgc caa act gtt gca atc atg tat cct 816  
Ser Lys Leu Val Leu Leu Leu Cys Gln Thr Val Ala Ile Met Tyr Pro  
260 265 270

tca ttc cac tca ttc atc ctg att atg gga agt agg aag cta aaa cag 864  
Ser Phe His Ser Phe Ile Leu Ile Met Gly Ser Arg Lys Leu Lys Gln  
275 280 285

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Ile Asp Trp Val Asn Thr Arg Lys Ile Ser Ser Ala Glu Gln Ile Leu

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35

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Thr Ala Leu Val Val Ser Arg Ile Gly Leu Leu Trp Val Met Leu Phe  
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Leu Trp Tyr Ala Thr Val Phe Asn Ser Ala Leu Tyr Gly Leu Glu Val  
 65 70 75 80

Arg Ile Val Ala Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Met  
 85 90 95

Trp Leu Ala Ala Ser Leu Ser Ile Phe Cys Leu Leu Lys Ile Ala Asn  
 100 105 110

Phe Ser Asn Leu Ile Ser Leu His Leu Lys Lys Arg Ile Lys Ser Val  
 115 120 125

Val Leu Val Ile Leu Leu Gly Pro Leu Val Phe Leu Ile Cys Asn Leu  
 130 135 140

Ala Val Ile Thr Met Asp Glu Arg Val Trp Thr Lys Glu Tyr Glu Gly  
 145 150 155 160

Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Ile His Leu Ser Ser  
 165 170 175

Leu Thr Val Thr Thr Leu Ala Asn Leu Ile Pro Phe Thr Leu Ser Leu  
 180 185 190

Ile Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

Met Arg Leu His Ser Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His  
 210 215 220

Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Met Leu Phe Ala Ile  
 225 230 235 240

Tyr Phe Leu Cys Ile Ile Thr Ser Thr Trp Asn Leu Arg Thr Gln Gln  
 245 250 255

Ser Lys Leu Val Leu Leu Leu Cys Gln Thr Val Ala Ile Met Tyr Pro  
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Ser Phe His Ser Phe Ile Leu Ile Met Gly Ser Arg Lys Leu Lys Gln  
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Tyr	Phe	Leu	Cys	Ile	Ile	Thr	Ser	Thr	Trp	Asn	Leu	Arg	Thr	Gln	Gln	
			245						250					255		
agc	aaa	ctt	gta	ctc	ctg	ctt	tgc	caa	act	gtt	gca	atc	atg	tat	ctt	816
Ser	Lys	Leu	Val	Leu	Leu	Leu	Cys	Gln	Thr	Val	Ala	Ile	Met	Tyr	Leu	
			260					265					270			
tca	ttc	cac	tca	ttc	atc	ctg	att	atg	gga	agt	agg	aag	cta	aaa	cag	864
Ser	Phe	His	Ser	Phe	Ile	Leu	Ile	Met	Gly	Ser	Arg	Lys	Leu	Lys	Gln	
		275					280					285				
acc	ttt	ctt	tca	gtt	ttg	tgg	cag	atg	aca	cgc	tga					900
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			20					25					30			
Ile	Asp	Trp	Val	Asn	Thr	Arg	Lys	Ile	Ser	Ser	Ala	Glu	Gln	Ile	Leu	
		35					40					45				
Thr	Ala	Leu	Val	Val	Ser	Arg	Ile	Gly	Leu	Leu	Trp	Val	Met	Leu	Phe	
		50				55					60					
Leu	Trp	Tyr	Ala	Thr	Val	Phe	Asn	Ser	Ala	Leu	Tyr	Gly	Leu	Glu	Val	
65				70						75				80		
Arg	Ile	Val	Ala	Ser	Asn	Ala	Trp	Ala	Val	Thr	Asn	His	Phe	Ser	Met	
				85					90					95		
Trp	Leu	Ala	Ala	Ser	Leu	Ser	Ile	Phe	Cys	Leu	Leu	Lys	Ile	Ala	Asn	
			100					105					110			
Phe	Ser	Asn	Leu	Ile	Ser	Leu	His	Leu	Lys	Lys	Arg	Ile	Lys	Ser	Val	
		115					120					125				
Val	Leu	Val	Ile	Leu	Leu	Gly	Pro	Leu	Val	Phe	Leu	Ile	Cys	Asn	Leu	
		130				135						140				
Ala	Val	Ile	Thr	Met	Asp	Glu	Arg	Val	Trp	Thr	Lys	Glu	Tyr	Glu	Gly	

145				150				155				160			
Asn	Val	Thr	Trp	Lys 165	Ile	Lys	Leu	Arg	Asn 170	Ala	Ile	His	Leu	Ser 175	Ser
Leu	Thr	Val	Thr	Thr 180	Leu	Ala	Asn	Leu 185	Ile	Pro	Phe	Thr	Leu 190	Ser	Leu
Ile	Cys	Phe 195	Leu	Leu	Leu	Ile	Cys 200	Ser	Leu	Cys	Lys	His 205	Leu	Lys	Lys
Met	Arg 210	Leu	His	Ser	Lys	Gly 215	Ser	Gln	Asp	Pro	Ser 220	Thr	Lys	Val	His
Ile 225	Lys	Ala	Leu	Gln	Thr 230	Val	Thr	Ser	Phe	Leu 235	Met	Leu	Phe	Ala	Ile 240
Tyr	Phe	Leu	Cys	Ile 245	Ile	Thr	Ser	Thr	Trp 250	Asn	Leu	Arg	Thr	Gln 255	Gln
Ser	Lys	Leu	Val 260	Leu	Leu	Leu	Cys	Gln 265	Thr	Val	Ala	Ile	Met 270	Tyr	Leu
Ser	Phe	His 275	Ser	Phe	Ile	Leu	Ile 280	Met	Gly	Ser	Arg	Lys 285	Leu	Lys	Gln
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ttt gtt ctt gga aat gtt gcc aat ggc ttc ata gcc cta gta aat gtc		96
Phe Val Leu Gly Asn Val Ala Asn Gly Phe Ile Ala Leu Val Asn Val		
20 25 30		
att gac tgg gtt aac aca cga aag atc tcc tca gct gag caa att ctc		144
Ile Asp Trp Val Asn Thr Arg Lys Ile Ser Ser Ala Glu Gln Ile Leu		
35 40 45		
act gct ctg gtg gtc tcc aga att ggt tta ctc tgg gtc atg tta ttc		192
Thr Ala Leu Val Val Ser Arg Ile Gly Leu Leu Trp Val Met Leu Phe		
50 55 60		
ctt tgg tat gca act gtg ttt aat tct gct tta tat ggt tta gaa gta		240
Leu Trp Tyr Ala Thr Val Phe Asn Ser Ala Leu Tyr Gly Leu Glu Val		
65 70 75 80		
aga att gtt gct tct aat gcc tgg gct gta acg aac cat ttc agc atg		288
Arg Ile Val Ala Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Met		
85 90 95		
tgg ctt gct gct agc ctc agc ata ttt tgt ttg ctc aag att gcc aat		336
Trp Leu Ala Ala Ser Leu Ser Ile Phe Cys Leu Leu Lys Ile Ala Asn		
100 105 110		

ttc tcc aac ctt att tct ctc cac cta aag aag aga att aag agt gtt Phe Ser Asn Leu Ile Ser Leu His Leu Lys Lys Arg Ile Lys Ser Val 115 120 125	384
gtt ctg gtg ata ctg ttg ggg ccc ttg gta ttt ttg att tgt aat ctt Val Leu Val Ile Leu Leu Gly Pro Leu Val Phe Leu Ile Cys Asn Leu 130 135 140	432
gct gtg ata acc atg gat gag aga gtg tgg aca aaa gaa tat gaa gga Ala Val Ile Thr Met Asp Glu Arg Val Trp Thr Lys Glu Tyr Glu Gly 145 150 155 160	480
aat gtg act tgg aag atc aaa ttg agg aat gca ata cac ctt tca agc Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Ile His Leu Ser Ser 165 170 175	528
ttg act gta act act cta gca aac ctc ata ccc ttt act ctg agc cta Leu Thr Val Thr Leu Ala Asn Leu Ile Pro Phe Thr Leu Ser Leu 180 185 190	576
ata tgt ttt ctg ctg tta atc tgt tct ctt tgt aaa cat ctc aag aag Ile Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys 195 200 205	624
atg cgg ctc cat agc aaa gga tct caa gat ccc agc acc aag gtc cat Met Arg Leu His Ser Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His 210 215 220	672
ata aaa gct ttg caa act gtg acc tcc ttc ctc atg tta ttt gcc att Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Met Leu Phe Ala Ile 225 230 235 240	720
tac ttt ctg tgt ata atc aca tca act tgg aat ctt agg aca cag cag Tyr Phe Leu Cys Ile Ile Thr Ser Thr Trp Asn Leu Arg Thr Gln Gln 245 250 255	768
agc aaa ctt gta ctc ctg ctt tgc caa act ctt gca atc atg tat cct Ser Lys Leu Val Leu Leu Leu Cys Gln Thr Leu Ala Ile Met Tyr Pro 260 265 270	816
tca ttc cac tca ttc atc ctg att atg gga agt agg aag cta aaa cag Ser Phe His Ser Phe Ile Leu Ile Met Gly Ser Arg Lys Leu Lys Gln 275 280 285	864
acc ttt ctt tca gtt ttg tgg cag atg aca tgc tga Thr Phe Leu Ser Val Leu Trp Gln Met Thr Cys 290 295	900

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&lt;211&gt; 299

&lt;212&gt; PRT

&lt;213&gt; homo sapiens

&lt;400&gt; 228

Met Met Cys Phe Leu Leu Ile Ile Ser Ser Ile Leu Val Val Phe Ala 1 5 10 15
--

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Phe Val Leu Gly Asn Val Ala Asn Gly Phe Ile Ala Leu Val Asn Val  
 20 25 30  
 Ile Asp Trp Val Asn Thr Arg Lys Ile Ser Ser Ala Glu Gln Ile Leu  
 35 40 45  
 Thr Ala Leu Val Val Ser Arg Ile Gly Leu Leu Trp Val Met Leu Phe  
 50 55 60  
 Leu Trp Tyr Ala Thr Val Phe Asn Ser Ala Leu Tyr Gly Leu Glu Val  
 65 70 75 80  
 Arg Ile Val Ala Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Met  
 85 90 95  
 Trp Leu Ala Ala Ser Leu Ser Ile Phe Cys Leu Leu Lys Ile Ala Asn  
 100 105 110  
 Phe Ser Asn Leu Ile Ser Leu His Leu Lys Lys Arg Ile Lys Ser Val  
 115 120 125  
 Val Leu Val Ile Leu Leu Gly Pro Leu Val Phe Leu Ile Cys Asn Leu  
 130 135 140  
 Ala Val Ile Thr Met Asp Glu Arg Val Trp Thr Lys Glu Tyr Glu Gly  
 145 150 155 160  
 Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Ile His Leu Ser Ser  
 165 170 175  
 Leu Thr Val Thr Thr Leu Ala Asn Leu Ile Pro Phe Thr Leu Ser Leu  
 180 185 190  
 Ile Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205  
 Met Arg Leu His Ser Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His  
 210 215 220  
 Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Met Leu Phe Ala Ile  
 225 230 235 240  
 Tyr Phe Leu Cys Ile Ile Thr Ser Thr Trp Asn Leu Arg Thr Gln Gln  
 245 250 255  
 Ser Lys Leu Val Leu Leu Leu Cys Gln Thr Leu Ala Ile Met Tyr Pro

260

265

270

Ser Phe His Ser Phe Ile Leu Ile Met Gly Ser Arg Lys Leu Lys Gln  
275 280 285

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&lt;400&gt; 229

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Met Met Cys Phe Leu Leu Ile Ile Ser Ser Ile Leu Val Val Phe Ala	
1 5 10 15	
ttt gtt ctt gga aat gtt gcc aat ggc ttc ata gcc cta gta aat gtc	96
Phe Val Leu Gly Asn Val Ala Asn Gly Phe Ile Ala Leu Val Asn Val	
20 25 30	
att gac tgg gtt aac aca cga aag atc tcc tca gct gag caa att ctc	144
Ile Asp Trp Val Asn Thr Arg Lys Ile Ser Ser Ala Glu Gln Ile Leu	
35 40 45	
act gct ctg gtg gtc tcc aga att ggt tta ctc tgg gtc atg tta ttc	192
Thr Ala Leu Val Val Ser Arg Ile Gly Leu Leu Trp Val Met Leu Phe	
50 55 60	
ctt tgg tat gca act gtg ttt aat tct gct tta tat ggt tta gaa gta	240
Leu Trp Tyr Ala Thr Val Phe Asn Ser Ala Leu Tyr Gly Leu Glu Val	
65 70 75 80	
aga att gtt gct tct aat gcc tgg gct gta acg aac cat ttc agc atg	288
Arg Ile Val Ala Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Met	
85 90 95	
tgg ctt gct gct agc ctc agc ata ttt tgt ttg ctc aag att gcc aat	336
Trp Leu Ala Ala Ser Leu Ser Ile Phe Cys Leu Leu Lys Ile Ala Asn	
100 105 110	
ttc tcc aac ctt att tct ctc cac cta aag aag aga att cag agt gtt	384
Phe Ser Asn Leu Ile Ser Leu His Leu Lys Lys Arg Ile Gln Ser Val	
115 120 125	
gtt ctg gtg ata ctg ttg ggg ccc ttg gta ttt ttg att tgt aat ctt	432
Val Leu Val Ile Leu Leu Gly Pro Leu Val Phe Leu Ile Cys Asn Leu	
130 135 140	
gct gtg ata acc atg gat gag aga gtg tgg aca aaa gaa tat gaa gga	480
Ala Val Ile Thr Met Asp Glu Arg Val Trp Thr Lys Glu Tyr Glu Gly	
145 150 155 160	
aat gtg act tgg aag atc aaa ttg agg aat gca ata cac ctt tca agc	528
Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Ile His Leu Ser Ser	
165 170 175	
ttg act gta act act cta gca aac ctc ata ccc ttt act ctg agc cta	576
Leu Thr Val Thr Thr Leu Ala Asn Leu Ile Pro Phe Thr Leu Ser Leu	
180 185 190	
ata tgt ttt ctg ctg tta atc tgt tct ctt tgt aaa cat ctc aag aag	624
Ile Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys	
195 200 205	
atg cgg ctc cat agc aaa gga tct caa gat ccc agc acc aag gtc cat	672
Met Arg Leu His Ser Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His	
210 215 220	

ata aaa gct ttg caa act gtg acc tcc ttc ctc atg tta ttt gcc att 720  
 Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Met Leu Phe Ala Ile  
 225 230 235 240  
 tac ttt ctg tgt ata atc aca tca act tgg aat ctt agg aca cag cag 768  
 Tyr Phe Leu Cys Ile Ile Thr Ser Thr Trp Asn Leu Arg Thr Gln Gln  
 245 250 255  
 agc aaa ctt gta ctc ctg ctt tgc caa act gtt gca atc atg tat cct 816  
 Ser Lys Leu Val Leu Leu Cys Gln Thr Val Ala Ile Met Tyr Pro  
 260 265 270  
 tca ttc cac tca ttc atc ctg att atg gga agt agg aag cta aaa cag 864  
 Ser Phe His Ser Phe Ile Leu Ile Met Gly Ser Arg Lys Leu Lys Gln  
 275 280 285  
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 Ile Asp Trp Val Asn Thr Arg Lys Ile Ser Ser Ala Glu Gln Ile Leu  
 35 40 45  
 Thr Ala Leu Val Val Ser Arg Ile Gly Leu Leu Trp Val Met Leu Phe  
 50 55 60  
 Leu Trp Tyr Ala Thr Val Phe Asn Ser Ala Leu Tyr Gly Leu Glu Val  
 65 70 75 80  
 Arg Ile Val Ala Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Met  
 85 90 95  
 Trp Leu Ala Ala Ser Leu Ser Ile Phe Cys Leu Leu Lys Ile Ala Asn  
 100 105 110  
 Phe Ser Asn Leu Ile Ser Leu His Leu Lys Lys Arg Ile Gln Ser Val  
 115 120 125



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Val Leu Val Ile Leu Leu Gly Pro Leu Val Phe Leu Ile Cys Asn Leu  
 130 135 140

Ala Val Ile Thr Met Asp Glu Arg Val Trp Thr Lys Glu Tyr Glu Gly  
 145 150 155 160

Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Ile His Leu Ser Ser  
 165 170 175

Leu Thr Val Thr Thr Leu Ala Asn Leu Ile Pro Phe Thr Leu Ser Leu  
 180 185 190

Ile Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

Met Arg Leu His Ser Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His  
 210 215 220

Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Met Leu Phe Ala Ile  
 225 230 235 240

Tyr Phe Leu Cys Ile Ile Thr Ser Thr Trp Asn Leu Arg Thr Gln Gln  
 245 250 255

Ser Lys Leu Val Leu Leu Leu Cys Gln Thr Val Ala Ile Met Tyr Pro  
 260 265 270

Ser Phe His Ser Phe Ile Leu Ile Met Gly Ser Arg Lys Leu Lys Gln  
 275 280 285

Thr Phe Leu Ser Val Leu Trp Gln Met Thr Arg  
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Met Met Cys Phe Leu Leu Ile Ile Ser Ser Ile Leu Val Val Phe Ala		
1 5 10 15		
ttt gtt ctt gga aat gtt gcc aat ggc ttc ata gcc cta gta aat gtc		96
Phe Val Leu Gly Asn Val Ala Asn Gly Phe Ile Ala Leu Val Asn Val		
20 25 30		
att gac tgg gtt aac aaa cga aag atc tcc tca gct gag caa att ctc		144
Ile Asp Trp Val Asn Lys Arg Lys Ile Ser Ser Ala Glu Gln Ile Leu		
35 40 45		
act gct ctg gtg gtc tcc aga att ggt tta ctc tgg gtc atg tta ttc		192
Thr Ala Leu Val Val Ser Arg Ile Gly Leu Leu Trp Val Met Leu Phe		
50 55 60		
ctt tgg tat gca act gtg ttt aat tct gct tta tat ggt tta gaa gta		240
Leu Trp Tyr Ala Thr Val Phe Asn Ser Ala Leu Tyr Gly Leu Glu Val		
65 70 75 80		
aga att gtt gct tct aat gcc tgg gct gta acg aac cat ttc agc atg		288
Arg Ile Val Ala Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Met		

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85								90				95				
tgg	ctt	gct	gct	agc	ctc	agc	ata	ttt	tgt	ttg	ctc	aag	att	gcc	aat	336
Trp	Leu	Ala	Ala	Ser	Leu	Ser	Ile	Phe	Cys	Leu	Leu	Lys	Ile	Ala	Asn	
			100						105				110			
ttc	tcc	aac	ctt	att	tct	ctc	cac	cta	aag	aag	aga	att	aag	agt	gtt	384
Phe	Ser	Asn	Leu	Ile	Ser	Leu	His	Leu	Lys	Lys	Arg	Ile	Lys	Ser	Val	
		115					120					125				
gtt	ctg	gtg	ata	ctg	ttg	ggg	ccc	ttg	gta	ttt	ttg	att	tgt	aat	ctt	432
Val	Leu	Val	Ile	Leu	Leu	Gly	Pro	Leu	Val	Phe	Leu	Ile	Cys	Asn	Leu	
	130					135					140					
gct	gtg	ata	acc	atg	gat	gag	aga	gtg	tgg	aca	aaa	gaa	tat	gaa	gga	480
Ala	Val	Ile	Thr	Met	Asp	Glu	Arg	Val	Trp	Thr	Lys	Glu	Tyr	Glu	Gly	
145					150				155						160	
aat	gtg	act	tgg	aag	atc	aaa	ttg	agg	aat	gca	ata	cac	ctt	tca	agc	528
Asn	Val	Thr	Trp	Lys	Ile	Lys	Leu	Arg	Asn	Ala	Ile	His	Leu	Ser	Ser	
				165					170					175		
ttg	act	gta	act	act	cta	gca	aac	ctc	ata	ccc	ttt	act	ctg	agc	cta	576
Leu	Thr	Val	Thr	Thr	Leu	Ala	Asn	Leu	Ile	Pro	Phe	Thr	Leu	Ser	Leu	
			180				185						190			
ata	tgt	ttt	ctg	ctg	tta	atc	tgt	tct	ctt	tgt	aaa	cat	ctc	aag	aag	624
Ile	Cys	Phe	Leu	Leu	Leu	Ile	Cys	Ser	Leu	Cys	Lys	His	Leu	Lys	Lys	
		195					200					205				
atg	cgg	ctc	cat	agc	aaa	gga	tct	caa	gat	ccc	agc	acc	aag	gtc	cat	672
Met	Arg	Leu	His	Ser	Lys	Gly	Ser	Gln	Asp	Pro	Ser	Thr	Lys	Val	His	
	210					215					220					
ata	aaa	gct	ttg	caa	act	gtg	acc	tcc	ttc	ctc	atg	tta	ttt	gcc	att	720
Ile	Lys	Ala	Leu	Gln	Thr	Val	Thr	Ser	Phe	Leu	Met	Leu	Phe	Ala	Ile	
225					230					235				240		
tac	ttt	ctg	tgt	ata	atc	aca	tca	act	tgg	aat	ctt	agg	aca	cag	cag	768
Tyr	Phe	Leu	Cys	Ile	Ile	Thr	Ser	Thr	Trp	Asn	Leu	Arg	Thr	Gln	Gln	
				245					250					255		
agc	aaa	ctt	gta	ctc	ctg	ctt	tgc	caa	act	gtt	gca	atc	atg	tat	ctt	816
Ser	Lys	Leu	Val	Leu	Leu	Leu	Cys	Gln	Thr	Val	Ala	Ile	Met	Tyr	Leu	
			260				265						270			
tca	ttc	cac	tca	ttc	atc	ctg	att	atg	gga	agt	agg	aag	cta	aaa	cag	864
Ser	Phe	His	Ser	Phe	Ile	Leu	Ile	Met	Gly	Ser	Arg	Lys	Leu	Lys	Gln	
		275					280					285				
acc	ttt	ctt	tca	gtt	ttg	tgg	cag	atg	aca	cgc	tga					900
Thr	Phe	Leu	Ser	Val	Leu	Trp	Gln	Met	Thr	Arg						
	290					295										

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 Ile Asp Trp Val Asn Lys Arg Lys Ile Ser Ser Ala Glu Gln Ile Leu  
 35 40 45  
 Thr Ala Leu Val Val Ser Arg Ile Gly Leu Leu Trp Val Met Leu Phe  
 50 55 60  
 Leu Trp Tyr Ala Thr Val Phe Asn Ser Ala Leu Tyr Gly Leu Glu Val  
 65 70 75 80  
 Arg Ile Val Ala Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Met  
 85 90 95  
 Trp Leu Ala Ala Ser Leu Ser Ile Phe Cys Leu Leu Lys Ile Ala Asn  
 100 105 110  
 Phe Ser Asn Leu Ile Ser Leu His Leu Lys Lys Arg Ile Lys Ser Val  
 115 120 125  
 Val Leu Val Ile Leu Leu Gly Pro Leu Val Phe Leu Ile Cys Asn Leu  
 130 135 140  
 Ala Val Ile Thr Met Asp Glu Arg Val Trp Thr Lys Glu Tyr Glu Gly  
 145 150 155 160  
 Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Ile His Leu Ser Ser  
 165 170 175  
 Leu Thr Val Thr Thr Leu Ala Asn Leu Ile Pro Phe Thr Leu Ser Leu  
 180 185 190  
 Ile Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205  
 Met Arg Leu His Ser Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His  
 210 215 220  
 Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Met Leu Phe Ala Ile  
 225 230 235 240

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Tyr Phe Leu Cys Ile Ile Thr Ser Thr Trp Asn Leu Arg Thr Gln Gln  
245 250 255

Ser Lys Leu Val Leu Leu Leu Cys Gln Thr Val Ala Ile Met Tyr Leu  
260 265 270

Ser Phe His Ser Phe Ile Leu Ile Met Gly Ser Arg Lys Leu Lys Gln  
275 280 285

Thr Phe Leu Ser Val Leu Trp Gln Met Thr Arg  
290 295

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1 5 10 15	
ttt gtt ctt gga aat gtt gcc aat ggc ttc ata gcc cta gta aat atc	96
Phe Val Leu Gly Asn Val Ala Asn Gly Phe Ile Ala Leu Val Asn Ile	
20 25 30	
att gac tgg gtt aac aca cga aag atc tcc tca gct gag caa att ctc	144
Ile Asp Trp Val Asn Thr Arg Lys Ile Ser Ser Ala Glu Gln Ile Leu	
35 40 45	
act gct ctg gtg gtc tcc aga att ggt tta ctc tgg gtc atg tta ttc	192
Thr Ala Leu Val Val Ser Arg Ile Gly Leu Leu Trp Val Met Leu Phe	
50 55 60	
ctt tgg tat gca act gtg ttt aat tct gct tta tat ggt tta gaa gta	240
Leu Trp Tyr Ala Thr Val Phe Asn Ser Ala Leu Tyr Gly Leu Glu Val	
65 70 75 80	
aga att gtt gct tct aat gcc tgg gct gta acg aac cat ttc agc atg	288
Arg Ile Val Ala Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Met	
85 90 95	
tgg ctt gct gct agc ctc agc ata ttt tgt ttg ctc aag att gcc aat	336
Trp Leu Ala Ala Ser Leu Ser Ile Phe Cys Leu Leu Lys Ile Ala Asn	
100 105 110	
ttc tcc aac ctt att tct ctc cac cta aag aag aga att aag agt gtt	384
Phe Ser Asn Leu Ile Ser Leu His Leu Lys Lys Arg Ile Lys Ser Val	
115 120 125	
gtt ctg gtg ata ctg ttg ggg ccc ttg gta ttt ttg att tgt aat ctt	432
Val Leu Val Ile Leu Leu Gly Pro Leu Val Phe Leu Ile Cys Asn Leu	
130 135 140	
gct gtg ata acc atg gat gag aga gtg tgg aca aaa gaa tat gaa gga	480
Ala Val Ile Thr Met Asp Glu Arg Val Trp Thr Lys Glu Tyr Glu Gly	
145 150 155 160	
aat gtg act tgg aag atc aaa ttg agg aat gca ata cac ctt tca agc	528
Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Ile His Leu Ser Ser	
165 170 175	
ttg act gta act act cta gca aac ctc ata ccc ttt act ctg agc cta	576
Leu Thr Val Thr Thr Leu Ala Asn Leu Ile Pro Phe Thr Leu Ser Leu	
180 185 190	
ata tgt ttt ctg ctg tta atc tgt tct ctt tgt aaa cat ctc aag aag	624
Ile Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys	

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195					200					205							
atg	cgg	ctc	cat	agc	aaa	gga	tct	caa	gat	ccc	agc	acc	aag	gtc	cat	672	
Met	Arg	Leu	His	Ser	Lys	Gly	Ser	Gln	Asp	Pro	Ser	Thr	Lys	Val	His		
210					215					220							
ata	aaa	gct	ttg	caa	act	gtg	acc	tcc	ttc	ctc	atg	tta	ttt	gcc	att	720	
Ile	Lys	Ala	Leu	Gln	Thr	Val	Thr	Ser	Phe	Leu	Met	Leu	Phe	Ala	Ile		
225					230					235					240		
tac	ttt	ctg	tgt	ata	atc	aca	tca	act	tgg	aat	ctt	agg	aca	cag	cag	768	
Tyr	Phe	Leu	Cys	Ile	Ile	Thr	Ser	Thr	Trp	Asn	Leu	Arg	Thr	Gln	Gln		
					245					250					255		
agc	aaa	ctt	gta	ctc	ctg	ctt	tgc	caa	act	gtt	gca	atc	atg	tat	cct	816	
Ser	Lys	Leu	Val	Leu	Leu	Leu	Cys	Gln	Thr	Val	Ala	Ile	Met	Tyr	Pro		
					260					265					270		
tca	ttc	cac	tca	ttc	atc	ctg	att	atg	gga	agt	agg	aag	cta	aaa	cag	864	
Ser	Phe	His	Ser	Phe	Ile	Leu	Ile	Met	Gly	Ser	Arg	Lys	Leu	Lys	Gln		
					275					280					285		
acc	ttt	ctt	tca	gtt	ttg	tgg	cag	atg	aca	cgc	tga					900	
Thr	Phe	Leu	Ser	Val	Leu	Trp	Gln	Met	Thr	Arg							
290					295												

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Phe	Val	Leu	Gly	Asn	Val	Ala	Asn	Gly	Phe	Ile	Ala	Leu	Val	Asn	Ile
			20					25					30		
Ile	Asp	Trp	Val	Asn	Thr	Arg	Lys	Ile	Ser	Ser	Ala	Glu	Gln	Ile	Leu
		35					40					45			
Thr	Ala	Leu	Val	Val	Ser	Arg	Ile	Gly	Leu	Leu	Trp	Val	Met	Leu	Phe
	50					55					60				
Leu	Trp	Tyr	Ala	Thr	Val	Phe	Asn	Ser	Ala	Leu	Tyr	Gly	Leu	Glu	Val
65					70				75					80	
Arg	Ile	Val	Ala	Ser	Asn	Ala	Trp	Ala	Val	Thr	Asn	His	Phe	Ser	Met
				85					90					95	
Trp	Leu	Ala	Ala	Ser	Leu	Ser	Ile	Phe	Cys	Leu	Leu	Lys	Ile	Ala	Asn
		100						105					110		

Phe Ser Asn Leu Ile Ser Leu His Leu Lys Lys Arg Ile Lys Ser Val  
 115 120 125

Val Leu Val Ile Leu Leu Gly Pro Leu Val Phe Leu Ile Cys Asn Leu  
 130 135 140

Ala Val Ile Thr Met Asp Glu Arg Val Trp Thr Lys Glu Tyr Glu Gly  
 145 150 155 160

Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Ile His Leu Ser Ser  
 165 170 175

Leu Thr Val Thr Thr Leu Ala Asn Leu Ile Pro Phe Thr Leu Ser Leu  
 180 185 190

Ile Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

Met Arg Leu His Ser Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His  
 210 215 220

Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Met Leu Phe Ala Ile  
 225 230 235 240

Tyr Phe Leu Cys Ile Ile Thr Ser Thr Trp Asn Leu Arg Thr Gln Gln  
 245 250 255

Ser Lys Leu Val Leu Leu Leu Cys Gln Thr Val Ala Ile Met Tyr Pro  
 260 265 270

Ser Phe His Ser Phe Ile Leu Ile Met Gly Ser Arg Lys Leu Lys Gln  
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1 5 10 15		
ttt gtt ctt gga aat gtt gcc aat ggc ttc ata gcc cta gta aat atc		96
Phe Val Leu Gly Asn Val Ala Asn Gly Phe Ile Ala Leu Val Asn Ile		
20 25 30		
att gac tgg gtt aac aca cga aag atc tcc tca gct gag caa att ctc		144
Ile Asp Trp Val Asn Thr Arg Lys Ile Ser Ser Ala Glu Gln Ile Leu		
35 40 45		
act gct ctg gtg gtc tcc aga att ggt tta ctc tgg gtc atg tta ttc		192
Thr Ala Leu Val Val Ser Arg Ile Gly Leu Leu Trp Val Met Leu Phe		
50 55 60		
ctt tgg tat gca act gtg ttt aat tct gct tta tat ggt tta gaa gta		240

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Leu 65	Trp	Tyr	Ala	Thr	Val 70	Phe	Asn	Ser	Ala	Leu 75	Tyr	Gly	Leu	Glu	Val 80	
aga	att	gtt	gct	tct	aat	gcc	tgg	gct	gta	acg	aac	cat	ttc	agc	atg	288
Arg	Ile	Val	Ala	Ser	Asn	Ala	Trp	Ala	Val	Thr	Asn	His	Phe	Ser	Met	
				85					90					95		
tgg	ctt	gct	gct	agc	ctc	agc	ata	ttt	tgt	ttg	ctc	aag	att	gcc	aat	336
Trp	Leu	Ala	Ala	Ser	Leu	Ser	Ile	Phe	Cys	Leu	Leu	Lys	Ile	Ala	Asn	
				100				105					110			
ttc	tcc	aac	ctt	att	tct	ctc	cac	cta	aag	aag	aga	att	aag	agt	gtt	384
Phe	Ser	Asn	Leu	Ile	Ser	Leu	His	Leu	Lys	Lys	Arg	Ile	Lys	Ser	Val	
		115					120					125				
gtt	ctg	gtg	ata	ctg	ttg	ggg	ccc	ttg	gta	ttt	ttg	att	tgt	aat	ctt	432
Val	Leu	Val	Ile	Leu	Leu	Gly	Pro	Leu	Val	Phe	Leu	Ile	Cys	Asn	Leu	
		130				135					140					
gct	gtg	ata	acc	atg	gat	gag	aga	gtg	tgg	aca	aaa	gaa	tat	gaa	gga	480
Ala	Val	Ile	Thr	Met	Asp	Glu	Arg	Val	Trp	Thr	Lys	Glu	Tyr	Glu	Gly	
					150					155					160	
aat	gtg	act	tgg	aag	atc	aaa	ttg	agg	aat	gca	ata	cac	ctt	tca	agc	528
Asn	Val	Thr	Trp	Lys	Ile	Lys	Leu	Arg	Asn	Ala	Ile	His	Leu	Ser	Ser	
				165					170					175		
ttg	act	gta	act	act	cta	gca	aac	ctc	ata	ccc	ttt	act	ctg	agc	cta	576
Leu	Thr	Val	Thr	Thr	Leu	Ala	Asn	Leu	Ile	Pro	Phe	Thr	Leu	Ser	Leu	
				180				185					190			
ata	tgt	ttt	ctg	ctg	tta	atc	tgt	tct	ctt	tgt	aaa	cat	ctc	aag	aag	624
Ile	Cys	Phe	Leu	Leu	Leu	Ile	Cys	Ser	Leu	Cys	Lys	His	Leu	Lys	Lys	
		195					200					205				
atg	cgg	ctc	cat	agc	aaa	gga	tct	caa	gat	ccc	agc	acc	aag	gtc	cat	672
Met	Arg	Leu	His	Ser	Lys	Gly	Ser	Gln	Asp	Pro	Ser	Thr	Lys	Val	His	
		210				215					220					
ata	aaa	gct	ttg	caa	act	gtg	acc	tcc	ttc	ctc	atg	tta	ttt	gcc	act	720
Ile	Lys	Ala	Leu	Gln	Thr	Val	Thr	Ser	Phe	Leu	Met	Leu	Phe	Ala	Thr	
		225			230					235					240	
tac	ttt	ctg	tgt	ata	atc	aca	tca	act	tgg	aat	ctt	agg	aca	cag	cag	768
Tyr	Phe	Leu	Cys	Ile	Ile	Thr	Ser	Thr	Trp	Asn	Leu	Arg	Thr	Gln	Gln	
				245					250					255		
agc	aaa	ctt	gta	ctc	ctg	ctt	tgc	caa	act	gtt	gca	atc	atg	tat	cct	816
Ser	Lys	Leu	Val	Leu	Leu	Leu	Cys	Gln	Thr	Val	Ala	Ile	Met	Tyr	Pro	
			260					265					270			
tca	ttc	cac	tca	ttc	atc	ctg	att	atg	gga	agt	agg	aag	cta	aaa	cag	864
Ser	Phe	His	Ser	Phe	Ile	Leu	Ile	Met	Gly	Ser	Arg	Lys	Leu	Lys	Gln	
		275					280					285				
acc	ttt	ctt	tca	gtt	ttg	tgg	cag	atg	aca	cgc	tga					900
Thr	Phe	Leu	Ser	Val	Leu	Trp	Gln	Met	Thr	Arg						
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Ile Asp Trp Val Asn Thr Arg Lys Ile Ser Ser Ala Glu Gln Ile Leu  
 35 40 45

Thr Ala Leu Val Val Ser Arg Ile Gly Leu Leu Trp Val Met Leu Phe  
 50 55 60

Leu Trp Tyr Ala Thr Val Phe Asn Ser Ala Leu Tyr Gly Leu Glu Val  
 65 70 75 80

Arg Ile Val Ala Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Met  
 85 90 95

Trp Leu Ala Ala Ser Leu Ser Ile Phe Cys Leu Leu Lys Ile Ala Asn  
 100 105 110

Phe Ser Asn Leu Ile Ser Leu His Leu Lys Lys Arg Ile Lys Ser Val  
 115 120 125

Val Leu Val Ile Leu Leu Gly Pro Leu Val Phe Leu Ile Cys Asn Leu  
 130 135 140

Ala Val Ile Thr Met Asp Glu Arg Val Trp Thr Lys Glu Tyr Glu Gly  
 145 150 155 160

Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Ile His Leu Ser Ser  
 165 170 175

Leu Thr Val Thr Thr Leu Ala Asn Leu Ile Pro Phe Thr Leu Ser Leu  
 180 185 190

Ile Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

Met Arg Leu His Ser Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His  
 210 215 220

Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Met Leu Phe Ala Thr  
225 230 235 240

Tyr Phe Leu Cys Ile Ile Thr Ser Thr Trp Asn Leu Arg Thr Gln Gln  
245 250 255

Ser Lys Leu Val Leu Leu Leu Cys Gln Thr Val Ala Ile Met Tyr Pro  
260 265 270

Ser Phe His Ser Phe Ile Leu Ile Met Gly Ser Arg Lys Leu Lys Gln  
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 ttt gtt ctt gga aat gtt gcc aat ggc ttc ata gcc cta gta aat atc 96  
 Phe Val Leu Gly Asn Val Ala Asn Gly Phe Ile Ala Leu Val Asn Ile  
 20 25 30  
 att gac tgg gtt aac aca cga aag atc tcc tca gct gag caa att ctc 144  
 Ile Asp Trp Val Asn Thr Arg Lys Ile Ser Ser Ala Glu Gln Ile Leu  
 35 40 45  
 act gct ctg gtg gtc tcc aga att ggt tta ctc tgg gtc atg tta ttc 192  
 Thr Ala Leu Val Val Ser Arg Ile Gly Leu Leu Trp Val Met Leu Phe  
 50 55 60  
 ctt tgg tat gca act gtg ttt aat tct gct tta tat ggt tta gaa gta 240  
 Leu Trp Tyr Ala Thr Val Phe Asn Ser Ala Leu Tyr Gly Leu Glu Val  
 65 70 75 80  
 aga att gtt gct tct aat gcc tgg gct gta acg aac cat ttc agc atg 288  
 Arg Ile Val Ala Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Met  
 85 90 95  
 tgg ctt gct gct agc ctc agc ata ttt tgt ttg ctc aag att gcc aat 336  
 Trp Leu Ala Ala Ser Leu Ser Ile Phe Cys Leu Leu Lys Ile Ala Asn  
 100 105 110  
 ttc tcc aac ctt att tct ctc cac cta aag aag aga att aag agt gtt 384  
 Phe Ser Asn Leu Ile Ser Leu His Leu Lys Lys Arg Ile Lys Ser Val  
 115 120 125  
 gtt ctg gtg ata ctg ttg ggg ccc ttg gta ttt ttg att tgt aat ctt 432  
 Val Leu Val Ile Leu Leu Gly Pro Leu Val Phe Leu Ile Cys Asn Leu  
 130 135 140  
 gct gtg ata acc atg gat gag tgt gtg tgg aca aaa gaa tat gaa gga 480  
 Ala Val Ile Thr Met Asp Glu Cys Val Trp Thr Lys Glu Tyr Glu Gly  
 145 150 155 160  
 aat gtg act tgg aag atc aaa ttg agg aat gca ata cac ctt tca agc 528  
 Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Ile His Leu Ser Ser  
 165 170 175  
 ttg act gta act act cta gca aac ctc ata ccc ttt act ctg agc cta 576

Leu Thr Val Thr Thr Leu Ala Asn Leu Ile Pro Phe Thr Leu Ser Leu  
 180 185 190  
 ata tgt ttt ctg ctg tta atc tgt tct ctt tgt aaa cat ctc aag aag 624  
 Ile Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205  
 atg cgg ctc cat agc aaa gga tct caa gat ccc agc acc aag gtc cat 672  
 Met Arg Leu His Ser Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His  
 210 215 220  
 gta aaa gct ttg caa act gtg acc tcc ttc ctc atg tta ttt gcc att 720  
 Val Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Met Leu Phe Ala Ile  
 225 230 235 240  
 tac ttt ctg tgt ata atc aca tca act tgg aat ctt agg aca cag cag 768  
 Tyr Phe Leu Cys Ile Ile Thr Ser Thr Trp Asn Leu Arg Thr Gln Gln  
 245 250 255  
 agc aaa ctt gta ctc ctg ctt tgc caa act gtt gca atc atg tat cct 816  
 Ser Lys Leu Val Leu Leu Cys Gln Thr Val Ala Ile Met Tyr Pro  
 260 265 270  
 tca ttc cac tca ttc atc ctg att atg gga agt agg aag cta aaa cag 864  
 Ser Phe His Ser Phe Ile Leu Ile Met Gly Ser Arg Lys Leu Lys Gln  
 275 280 285  
 acc ttt ctt tca gtt ttg tgg cag atg aca cgc tga 900  
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 Ile Asp Trp Val Asn Thr Arg Lys Ile Ser Ser Ala Glu Gln Ile Leu  
 35 40 45  
 Thr Ala Leu Val Val Ser Arg Ile Gly Leu Leu Trp Val Met Leu Phe  
 50 55 60  
 Leu Trp Tyr Ala Thr Val Phe Asn Ser Ala Leu Tyr Gly Leu Glu Val  
 65 70 75 80  
 Arg Ile Val Ala Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Met  
 85 90 95

Trp Leu Ala Ala Ser Leu Ser Ile Phe Cys Leu Leu Lys Ile Ala Asn  
 100 105 110  
 Phe Ser Asn Leu Ile Ser Leu His Leu Lys Lys Arg Ile Lys Ser Val  
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 Val Leu Val Ile Leu Leu Gly Pro Leu Val Phe Leu Ile Cys Asn Leu  
 130 135 140  
 Ala Val Ile Thr Met Asp Glu Cys Val Trp Thr Lys Glu Tyr Glu Gly  
 145 150 155 160  
 Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Ile His Leu Ser Ser  
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 180 185 190  
 Ile Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205  
 Met Arg Leu His Ser Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His  
 210 215 220  
 Val Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Met Leu Phe Ala Ile  
 225 230 235 240  
 Tyr Phe Leu Cys Ile Ile Thr Ser Thr Trp Asn Leu Arg Thr Gln Gln  
 245 250 255  
 Ser Lys Leu Val Leu Leu Leu Cys Gln Thr Val Ala Ile Met Tyr Pro  
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15		
ttt att ctt gga aat ttt gcc aat ggc ttt ata gca ctg ata aat ttc		96
Phe Ile Leu Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Ile Asn Phe		
20	25	30
att gcc tgg gtc aag aga caa aag atc tcc tca gct gat caa att att		144
Ile Ala Trp Val Lys Arg Gln Lys Ile Ser Ser Ala Asp Gln Ile Ile		
35	40	45



gct gct ctg gca gtc tcc aaa gtt ggt ttg ctc tgg gta ata tta tta Ala Ala Leu Ala Val Ser Lys Val Gly Leu Leu Trp Val Ile Leu Leu 50 55 60	192
cat tgg tat tca act gtg ttg aat cca act tca tct aat tta aaa gta His Trp Tyr Ser Thr Val Leu Asn Pro Thr Ser Ser Asn Leu Lys Val 65 70 75 80	240
ata att ttt att tct aat gcc tgg gca gta acc aat cat ttc agc atc Ile Ile Phe Ile Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Ile 85 90 95	288
tgg ctt gct act agc ctc agc ata ttt tat ttg ctc aag atc gtc aat Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Val Asn 100 105 110	336
ttc tcc aga ctt att ttt cat cac tta aaa agg aag gct aag agt gta Phe Ser Arg Leu Ile Phe His His Leu Lys Arg Lys Ala Lys Ser Val 115 120 125	384
gtt ctg gtg ata gtg ttg ggg tct ttg ttc ttt ttg gtt tgt cac ctt Val Leu Val Ile Val Leu Gly Ser Leu Phe Phe Leu Val Cys His Leu 130 135 140	432
gtg atg aaa cac acg tat ata aat gtg tgg aca gaa gaa tgt gaa gga Val Met Lys His Thr Tyr Ile Asn Val Trp Thr Glu Glu Cys Glu Gly 145 150 155 160	480
aac gta act tgg aag atc aaa ctg agg aat gca atg cac ctt tcc aac Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Met His Leu Ser Asn 165 170 175	528
ttg act gta gcc atg cta gca aac ttg ata cca ttc act ctg acc ctg Leu Thr Val Ala Met Leu Ala Asn Leu Ile Pro Phe Thr Leu Thr Leu 180 185 190	576
ata tct ttt ctg ctg tta atc tac tct ctg tgt aaa cat ctg aag aag Ile Ser Phe Leu Leu Leu Ile Tyr Ser Leu Cys Lys His Leu Lys Lys 195 200 205	624
atg cag ctc cat ggc aaa gga tct caa gat ccc agc acc aag atc cac Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Ile His 210 215 220	672
ata aaa gct ctg caa act gtg acc tcc ttc ctc ata tta ctt gcc att Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Ile Leu Leu Ala Ile 225 230 235 240	720
tac ttt ctg tgt cta atc ata tcg ttt tgg aat ttt aag atg cga cca Tyr Phe Leu Cys Leu Ile Ile Ser Phe Trp Asn Phe Lys Met Arg Pro 245 250 255	768
aaa gaa att gtc tta atg ctt tgc caa gct ttt gga atc ata tat cca Lys Glu Ile Val Leu Met Leu Cys Gln Ala Phe Gly Ile Ile Tyr Pro 260 265 270	816
tca ttc cac tca ttc att ctg att tgg ggg aac aag acg cta aag cag Ser Phe His Ser Phe Ile Leu Ile Trp Gly Asn Lys Thr Leu Lys Gln 275 280 285	864
acc ttt ctt tca gtt ttg tgg cag gtg act tgc tgg gca aaa gga cag	912

Thr Phe Leu Ser Val Leu Trp Gln Val Thr Cys Trp Ala Lys Gly Gln  
 290 295 300

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 Asn Gln Ser Thr Pro  
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930

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Phe Ile Leu Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Ile Asn Phe  
 20 25 30

Ile Ala Trp Val Lys Arg Gln Lys Ile Ser Ser Ala Asp Gln Ile Ile  
 35 40 45

Ala Ala Leu Ala Val Ser Lys Val Gly Leu Leu Trp Val Ile Leu Leu  
 50 55 60

His Trp Tyr Ser Thr Val Leu Asn Pro Thr Ser Ser Asn Leu Lys Val  
 65 70 75 80

Ile Ile Phe Ile Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Ile  
 85 90 95

Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Val Asn  
 100 105 110

Phe Ser Arg Leu Ile Phe His His Leu Lys Arg Lys Ala Lys Ser Val  
 115 120 125

Val Leu Val Ile Val Leu Gly Ser Leu Phe Phe Leu Val Cys His Leu  
 130 135 140

Val Met Lys His Thr Tyr Ile Asn Val Trp Thr Glu Glu Cys Glu Gly  
 145 150 155 160

Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Met His Leu Ser Asn  
 165 170 175

Leu Thr Val Ala Met Leu Ala Asn Leu Ile Pro Phe Thr Leu Thr Leu  
 180 185 190

Ile Ser Phe Leu Leu Leu Ile Tyr Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Ile His  
 210 215 220

Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Ile Leu Leu Ala Ile  
 225 230 235 240

Tyr Phe Leu Cys Leu Ile Ile Ser Phe Trp Asn Phe Lys Met Arg Pro  
 245 250 255

Lys Glu Ile Val Leu Met Leu Cys Gln Ala Phe Gly Ile Ile Tyr Pro  
 260 265 270

Ser Phe His Ser Phe Ile Leu Ile Trp Gly Asn Lys Thr Leu Lys Gln  
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Asn Gln Ser Thr Pro  
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1 5 10 15		
ttt att ctt gga aat ttt gcc aat ggc ttt ata gca ctg ata aat ttc		96
Phe Ile Leu Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Ile Asn Phe		
20 25 30		
att gcc tgg gtc aag aga caa aag atc tcc tca gct gat caa att att		144
Ile Ala Trp Val Lys Arg Gln Lys Ile Ser Ser Ala Asp Gln Ile Ile		
35 40 45		
gct gct ctg gca gtc tcc aaa gtt ggt ttg ctc tgg gta ata tta tta		192
Ala Ala Leu Ala Val Ser Lys Val Gly Leu Leu Trp Val Ile Leu Leu		
50 55 60		
cat tgg tat tca act gtg ttg aat cca act tca tct aat tta aaa gta		240
His Trp Tyr Ser Thr Val Leu Asn Pro Thr Ser Ser Asn Leu Lys Val		
65 70 75 80		
ata att ttt att tct aat gcc tgg gca gta acc aat cat ttc agc atc		288
Ile Ile Phe Ile Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Ile		
85 90 95		
tgg ctt gct act agc ctc agc ata ttt tat ttg ctc aag atc gtc aat		336
Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Val Asn		
100 105 110		
ttc tcc aga ctt att ttt cat cac tta aaa agg aag gct aag agt gta		384
Phe Ser Arg Leu Ile Phe His His Leu Lys Arg Lys Ala Lys Ser Val		
115 120 125		

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gtt	ctg	gtg	ata	gtg	ttg	ggg	tct	ttg	ttc	ttt	ttg	gtt	tgt	cac	ctt	432
Val	Leu	Val	Ile	Val	Leu	Gly	Ser	Leu	Phe	Phe	Leu	Val	Cys	His	Leu	
130						135					140					
gtg	atg	aaa	cac	acg	tat	ata	aat	gtg	tgg	aca	gaa	gaa	tgt	gaa	gga	480
Val	Met	Lys	His	Thr	Tyr	Ile	Asn	Val	Trp	Thr	Glu	Glu	Cys	Glu	Gly	
145					150					155					160	
aac	gta	act	tgg	aag	atc	aaa	ctg	agg	aat	gca	atg	cac	ctt	tcc	aac	528
Asn	Val	Thr	Trp	Lys	Ile	Lys	Leu	Arg	Asn	Ala	Met	His	Leu	Ser	Asn	
				165					170					175		
ttg	act	gta	gcc	atg	cta	gca	aac	ttg	ata	cca	ttc	act	ctg	acc	ctg	576
Leu	Thr	Val	Ala	Met	Leu	Ala	Asn	Leu	Ile	Pro	Phe	Thr	Leu	Thr	Leu	
			180					185						190		
ata	tct	ttt	ctg	ctg	tta	atc	tac	tct	ctg	tgt	aaa	cat	ctg	aag	aag	624
Ile	Ser	Phe	Leu	Leu	Leu	Ile	Tyr	Ser	Leu	Cys	Lys	His	Leu	Lys	Lys	
		195					200					205				
atg	cag	ctc	cat	ggc	aaa	gga	tct	caa	gat	ccc	agc	acc	aag	atc	cac	672
Met	Gln	Leu	His	Gly	Lys	Gly	Ser	Gln	Asp	Pro	Ser	Thr	Lys	Ile	His	
	210					215					220					
ata	aaa	gct	ctg	caa	act	gtg	acc	tcc	ttc	ctc	ata	tta	ctt	gcc	att	720
Ile	Lys	Ala	Leu	Gln	Thr	Val	Thr	Ser	Phe	Leu	Ile	Leu	Leu	Ala	Ile	
225					230					235					240	
tac	ttt	ctg	tgt	cta	atc	ata	tgc	ttt	tgg	aat	ttt	aag	atg	cga	cca	768
Tyr	Phe	Leu	Cys	Leu	Ile	Ile	Ser	Phe	Trp	Asn	Phe	Lys	Met	Arg	Pro	
				245					250					255		
aaa	gaa	att	gtc	tta	atg	ctt	tgc	caa	gct	ttt	gga	atc	gta	tat	cca	816
Lys	Glu	Ile	Val	Leu	Met	Leu	Cys	Gln	Ala	Phe	Gly	Ile	Val	Tyr	Pro	
			260					265					270			
tca	ttc	cac	tca	ttc	att	ctg	att	tgg	ggg	aac	aag	acg	cta	aag	cag	864
Ser	Phe	His	Ser	Phe	Ile	Leu	Ile	Trp	Gly	Asn	Lys	Thr	Leu	Lys	Gln	
		275					280					285				
acc	ttt	ctt	tca	gtt	ttg	tgg	cag	gtg	act	tgc	tgg	gca	aaa	gga	cag	912
Thr	Phe	Leu	Ser	Val	Leu	Trp	Gln	Val	Thr	Cys	Trp	Ala	Lys	Gly	Gln	
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aac	cag	tca	act	cca	tag											930
Asn	Gln	Ser	Thr	Pro												
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Phe	Ile	Leu	Gly	Asn	Phe	Ala	Asn	Gly	Phe	Ile	Ala	Leu	Ile	Asn	Phe
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20					25					30					
Ile	Ala	Trp	Val	Lys	Arg	Gln	Lys	Ile	Ser	Ser	Ala	Asp	Gln	Ile	Ile
	35						40					45			
Ala	Ala	Leu	Ala	Val	Ser	Lys	Val	Gly	Leu	Leu	Trp	Val	Ile	Leu	Leu
	50					55					60				
His	Trp	Tyr	Ser	Thr	Val	Leu	Asn	Pro	Thr	Ser	Ser	Asn	Leu	Lys	Val
65						70					75				80
Ile	Ile	Phe	Ile	Ser	Asn	Ala	Trp	Ala	Val	Thr	Asn	His	Phe	Ser	Ile
				85					90					95	
Trp	Leu	Ala	Thr	Ser	Leu	Ser	Ile	Phe	Tyr	Leu	Leu	Lys	Ile	Val	Asn
			100					105						110	
Phe	Ser	Arg	Leu	Ile	Phe	His	His	Leu	Lys	Arg	Lys	Ala	Lys	Ser	Val
		115					120					125			
Val	Leu	Val	Ile	Val	Leu	Gly	Ser	Leu	Phe	Phe	Leu	Val	Cys	His	Leu
	130					135					140				
Val	Met	Lys	His	Thr	Tyr	Ile	Asn	Val	Trp	Thr	Glu	Glu	Cys	Glu	Gly
145						150					155				160
Asn	Val	Thr	Trp	Lys	Ile	Lys	Leu	Arg	Asn	Ala	Met	His	Leu	Ser	Asn
				165					170					175	
Leu	Thr	Val	Ala	Met	Leu	Ala	Asn	Leu	Ile	Pro	Phe	Thr	Leu	Thr	Leu
			180					185						190	
Ile	Ser	Phe	Leu	Leu	Leu	Ile	Tyr	Ser	Leu	Cys	Lys	His	Leu	Lys	Lys
		195					200					205			
Met	Gln	Leu	His	Gly	Lys	Gly	Ser	Gln	Asp	Pro	Ser	Thr	Lys	Ile	His
	210					215					220				
Ile	Lys	Ala	Leu	Gln	Thr	Val	Thr	Ser	Phe	Leu	Ile	Leu	Leu	Ala	Ile
225						230					235				240
Tyr	Phe	Leu	Cys	Leu	Ile	Ile	Ser	Phe	Trp	Asn	Phe	Lys	Met	Arg	Pro
				245					250					255	
Lys	Glu	Ile	Val	Leu	Met	Leu	Cys	Gln	Ala	Phe	Gly	Ile	Val	Tyr	Pro
			260					265						270	

Ser Phe His Ser Phe Ile Leu Ile Trp Gly Asn Lys Thr Leu Lys Gln  
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Asn Gln Ser Thr Pro  
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 Phe Ile Leu Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Ile Asn Phe  
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 att gcc tgg gtc aag aga caa aag atc tcc tca gct gat caa att att 144  
 Ile Ala Trp Val Lys Arg Gln Lys Ile Ser Ser Ala Asp Gln Ile Ile  
 35 40 45  
  
 gct gct ctg gca gtc tcc aaa gtt ggt ttg ctc tgg gta ata tta tta 192  
 Ala Ala Leu Ala Val Ser Lys Val Gly Leu Leu Trp Val Ile Leu Leu  
 50 55 60  
  
 cat tgg tat tca act gtg ttg aat cca act tca tct aat tta aaa gta 240  
 His Trp Tyr Ser Thr Val Leu Asn Pro Thr Ser Ser Asn Leu Lys Val  
 65 70 75 80  
  
 ata att ttt att tct aat gcc tgg gca gta acc aat cat ttc agc atc 288  
 Ile Ile Phe Ile Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Ile  
 85 90 95  
  
 tgg ctt gct act agc ctc agc ata ttt tat ttg ctc aag atc gtc aat 336  
 Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Val Asn  
 100 105 110  
  
 ttc tcc aga ctt att ttt cat cac tta aaa agg aag gct aag agt gta 384  
 Phe Ser Arg Leu Ile Phe His His Leu Lys Arg Lys Ala Lys Ser Val  
 115 120 125  
  
 gtt ctg gtg ata gtg ttg ggg tct ttg ttc ttt ttg gtt tgt cac ctt 432  
 Val Leu Val Ile Val Leu Gly Ser Leu Phe Phe Leu Val Cys His Leu  
 130 135 140  
  
 gtg atg aaa cac acg tat ata aat gtg tgg aca gaa gaa tgt gaa gga 480  
 Val Met Lys His Thr Tyr Ile Asn Val Trp Thr Glu Glu Cys Glu Gly  
 145 150 155 160  
  
 aac gta act tgg aag atc aaa ctg agg aat gca ata cac ctt tcc aac 528  
 Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Ile His Leu Ser Asn  
 165 170 175  
  
 ttg act gta gcc atg cta gca aac ttg ata cca ttc act ctg acc ctg 576  
 Leu Thr Val Ala Met Leu Ala Asn Leu Ile Pro Phe Thr Leu Thr Leu  
 180 185 190  
  
 ata tct ttt ctg ctg tta atc tac tct ctg tgt aaa cat ctg aag aag 624  
 Ile Ser Phe Leu Leu Leu Ile Tyr Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205



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atg cag ctc cat ggc aaa gga tct caa gat ccc agc acc aag atc cac	672
Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Ile His	
210 215 220	
ata aaa gct ctg caa act gtg acc tcc ttc ctc ata tta ctt gcc att	720
Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Ile Leu Leu Ala Ile	
225 230 235 240	
tac ttt ctg tgt cta atc ata tcg ttt tgg aat ttt aag atg cga cca	768
Tyr Phe Leu Cys Leu Ile Ile Ser Phe Trp Asn Phe Lys Met Arg Pro	
245 250 255	
aaa gaa att gtc tta atg ctt tgc caa gct ttt gga atc ata tat cca	816
Lys Glu Ile Val Leu Met Leu Cys Gln Ala Phe Gly Ile Ile Tyr Pro	
260 265 270	
tca ttc cac tca ttc att ctg att tgg ggg aac aag acg cta aag cag	864
Ser Phe His Ser Phe Ile Leu Ile Trp Gly Asn Lys Thr Leu Lys Gln	
275 280 285	
acc ttt ctt tca gtt ttg tgg cag gtg act tgc tgg gca aaa gga cag	912
Thr Phe Leu Ser Val Leu Trp Gln Val Thr Cys Trp Ala Lys Gly Gln	
290 295 300	
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Asn Gln Ser Thr Pro	
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Ile Ala Trp Val Lys Arg Gln Lys Ile Ser Ser Ala Asp Gln Ile Ile	
35 40 45	
Ala Ala Leu Ala Val Ser Lys Val Gly Leu Leu Trp Val Ile Leu Leu	
50 55 60	
His Trp Tyr Ser Thr Val Leu Asn Pro Thr Ser Ser Asn Leu Lys Val	
65 70 75 80	
Ile Ile Phe Ile Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Ile	
85 90 95	
Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Val Asn	

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Phe Ser Arg Leu Ile Phe His His Leu Lys Arg Lys Ala Lys Ser Val				
115		120		125
Val Leu Val Ile Val Leu Gly Ser Leu Phe Phe Leu Val Cys His Leu				
130		135		140
Val Met Lys His Thr Tyr Ile Asn Val Trp Thr Glu Glu Cys Glu Gly				
145		150		155
Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Ile His Leu Ser Asn				
	165		170	175
Leu Thr Val Ala Met Leu Ala Asn Leu Ile Pro Phe Thr Leu Thr Leu				
	180		185	190
Ile Ser Phe Leu Leu Leu Ile Tyr Ser Leu Cys Lys His Leu Lys Lys				
	195		200	205
Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Ile His				
	210		215	220
Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Ile Leu Leu Ala Ile				
225		230		235
Tyr Phe Leu Cys Leu Ile Ile Ser Phe Trp Asn Phe Lys Met Arg Pro				
	245		250	255
Lys Glu Ile Val Leu Met Leu Cys Gln Ala Phe Gly Ile Ile Tyr Pro				
	260		265	270
Ser Phe His Ser Phe Ile Leu Ile Trp Gly Asn Lys Thr Leu Lys Gln				
	275		280	285
Thr Phe Leu Ser Val Leu Trp Gln Val Thr Cys Trp Ala Lys Gly Gln				
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Asn Gln Ser Thr Pro				
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 ttt att ctt gga aat ttt gcc aat ggc ttt ata gca ctg ata aat ttc 96  
 Phe Ile Leu Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Ile Asn Phe  
 20 25 30  
 att gcc tgg gtc aag aga caa aag atc tcc tca gct gat caa att att 144  
 Ile Ala Trp Val Lys Arg Gln Lys Ile Ser Ser Ala Asp Gln Ile Ile  
 35 40 45

gct Ala 50	gct Ala	ctg Leu	gca Ala	gtc Val	tcc Ser	aaa Lys 55	gtt Val	ggg Gly	ttg Leu	ctc Leu	tgg Trp 60	gta Val	ata Ile	tta Leu	tta Leu	192
cat His 65	tgg Trp	tat Tyr	tca Ser	act Thr	gtg Val 70	ttg Leu	aat Asn	cca Pro	act Thr	tca Ser 75	tct Ser	aat Asn	tta Leu	aaa Lys 80	gta Val	240
ata Ile	att Ile	ttt Phe	att Ile	tct Ser 85	aat Asn	gcc Ala	tgg Trp	gca Ala	gta Val 90	acc Thr	aat Asn	cat His	ttc Phe	agc Ser 95	atc Ile	288
tgg Trp	ctt Leu	gct Ala	act Thr 100	agc Ser	ctc Leu	agc Ser	ata Ile	ttt Phe 105	tat Tyr	ttg Leu	ctc Leu	aag Lys	atc Ile 110	gtc Val	aat Asn	336
ttc Phe	tcc Ser	aga Arg 115	ctt Leu	att Ile	ttt Phe	cat His 120	cac His	tta Leu	aaa Lys	agg Arg	aag Lys	gct Ala 125	aag Lys	agt Ser	gta Val	384
gtt Val 130	ctg Leu	gtg Val	ata Ile	gtg Val	ttg Leu	ggg Gly 135	tct Ser	ttg Leu	ttc Phe	ttt Phe	ttg Leu 140	gtt Val	tgt Cys	cac His	ctt Leu	432
gtg Val 145	atg Met	aaa Lys	aac Asn	acg Thr	tat Tyr 150	ata Ile	aat Asn	gtg Val	tgg Trp	aca Thr 155	gaa Glu	gaa Glu	tgt Cys	gaa Glu 160	gga Gly	480
aac Asn	gta Val	act Thr	tgg Trp	aag Lys 165	atc Ile	aaa Lys	ctg Leu	agg Arg	aat Asn 170	gca Ala	atg Met	cac His	ctt Leu	tcc Ser 175	aac Asn	528
ttg Leu	act Thr	gta Val	gcc Ala	atg Met	cta Leu	gca Ala	aac Asn	ttg Leu 185	ata Ile	cca Pro	ttc Phe	act Thr	ctg Leu 190	acc Thr	ctg Leu	576
ata Ile	tct Ser	ttt Phe 195	ctg Leu	ctg Leu	tta Leu	atc Ile	tac Tyr 200	tct Ser	ctg Leu	tgt Cys	aaa Lys	cat His 205	ctg Leu	aag Lys	aag Lys	624
atg Met 210	cag Gln	ctc Leu	cat His	ggc Gly	aaa Lys	gga Gly 215	tct Ser	caa Gln	gat Asp	ccc Pro	agc Ser 220	acc Thr	aag Lys	atc Ile	cac His	672
ata Ile 225	aaa Lys	gct Ala	ctg Leu	caa Gln	act Thr 230	gtg Val	acc Thr	tcc Ser	ttc Phe	ctc Leu 235	ata Ile	tta Leu	ctt Leu	gcc Ala	att Ile 240	720
tac Tyr	ttt Phe	ctg Leu	tgt Cys	cta Leu 245	atc Ile	ata Ile	tcg Ser	ttt Phe	tgg Trp 250	aat Asn	ttt Phe	aag Lys	atg Met	cga Arg 255	cca Pro	768
aaa Lys	gaa Glu	att Ile 260	gtc Val	tta Leu	atg Met	ctt Leu	tgc Cys 265	caa Gln	gct Ala	ttt Phe	gga Gly	atc Ile	ata Ile 270	tat Tyr	cca Pro	816
tca Ser	ttc Phe 275	cac His	tca Ser	ttc Phe	att Ile	ctg Leu	att Ile 280	tgg Trp	ggg Gly	aac Asn	aag Lys	acg Thr 285	cta Leu	aag Lys	cag Gln	864

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acc ttt ctt tca gtt ttg tgg cag gtg act tgc tgg gca aaa gga cag 912  
 Thr Phe Leu Ser Val Leu Trp Gln Val Thr Cys Trp Ala Lys Gly Gln  
 290 295 300

aac cag tca act cca tag 930  
 Asn Gln Ser Thr Pro  
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 20 25 30

Ile Ala Trp Val Lys Arg Gln Lys Ile Ser Ser Ala Asp Gln Ile Ile  
 35 40 45

Ala Ala Leu Ala Val Ser Lys Val Gly Leu Leu Trp Val Ile Leu Leu  
 50 55 60

His Trp Tyr Ser Thr Val Leu Asn Pro Thr Ser Ser Asn Leu Lys Val  
 65 70 75 80

Ile Ile Phe Ile Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Ile  
 85 90 95

Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Val Asn  
 100 105 110

Phe Ser Arg Leu Ile Phe His His Leu Lys Arg Lys Ala Lys Ser Val  
 115 120 125

Val Leu Val Ile Val Leu Gly Ser Leu Phe Phe Leu Val Cys His Leu  
 130 135 140

Val Met Lys Asn Thr Tyr Ile Asn Val Trp Thr Glu Glu Cys Glu Gly  
 145 150 155 160

Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Met His Leu Ser Asn  
 165 170 175

Leu Thr Val Ala Met Leu Ala Asn Leu Ile Pro Phe Thr Leu Thr Leu

180

185

190

Ile Ser Phe Leu Leu Leu Ile Tyr Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Ile His  
 210 215 220

Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Ile Leu Leu Ala Ile  
 225 230 235 240

Tyr Phe Leu Cys Leu Ile Ile Ser Phe Trp Asn Phe Lys Met Arg Pro  
 245 250 255

Lys Glu Ile Val Leu Met Leu Cys Gln Ala Phe Gly Ile Ile Tyr Pro  
 260 265 270

Ser Phe His Ser Phe Ile Leu Ile Trp Gly Asn Lys Thr Leu Lys Gln  
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Asn Gln Ser Thr Pro  
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1 5 10 15		
ttt att ctt gga aat ttt gcc aat ggc ttt ata gca ctg ata aat ttc		96
Phe Ile Leu Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Ile Asn Phe		
20 25 30		
att gcc tgg gtc aag aga caa aag atc tcc tca gct gat caa att att		144
Ile Ala Trp Val Lys Arg Gln Lys Ile Ser Ser Ala Asp Gln Ile Ile		
35 40 45		
gct gct ctg gca gtc tcc aaa gtt ggt ttg ctc tgg gta ata tta tta		192
Ala Ala Leu Ala Val Ser Lys Val Gly Leu Leu Trp Val Ile Leu Leu		
50 55 60		
cat tgg tat tca act gtg ttg aat cca act tca tct aat tta aaa gta		240
His Trp Tyr Ser Thr Val Leu Asn Pro Thr Ser Ser Asn Leu Lys Val		
65 70 75 80		
ata att ttt att tct aat gcc tgg gca gta acc aat cat ttc agc atc		288
Ile Ile Phe Ile Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Ile		
85 90 95		
tgg ctt gct act agc ctc agc ata ttt tat ttg ctc aag atc gtc aat		336
Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Val Asn		
100 105 110		
ttc tcc aga ctt att ttt cat cac tta aaa agg aag gct aag agt gta		384
Phe Ser Arg Leu Ile Phe His His Leu Lys Arg Lys Ala Lys Ser Val		
115 120 125		

gtt	ctg	gtg	ata	gtg	ttg	ggg	tct	ttg	ttc	ttt	ttg	gtt	tgt	caa	ctt	432
Val	Leu	Val	Ile	Val	Leu	Gly	Ser	Leu	Phe	Phe	Leu	Val	Cys	Gln	Leu	
130						135					140					
gtg	atg	aaa	aac	acg	tat	ata	aat	gtg	tgg	aca	gaa	gaa	tgt	gaa	gga	480
Val	Met	Lys	Asn	Thr	Tyr	Ile	Asn	Val	Trp	Thr	Glu	Glu	Cys	Glu	Gly	
145					150					155					160	
aac	gta	act	tgg	aag	atc	aaa	ctg	agg	aat	gca	atg	cac	ctt	tcc	aac	528
Asn	Val	Thr	Trp	Lys	Ile	Lys	Leu	Arg	Asn	Ala	Met	His	Leu	Ser	Asn	
				165					170					175		
ttg	act	gta	gcc	atg	cta	gca	aac	ttg	ata	cca	ttc	act	ctg	acc	ctg	576
Leu	Thr	Val	Ala	Met	Leu	Ala	Asn	Leu	Ile	Pro	Phe	Thr	Leu	Thr	Leu	
			180					185						190		
ata	tct	ttt	ctg	ctg	tta	atc	tac	tct	ctg	tgt	aaa	cat	ctg	aag	aag	624
Ile	Ser	Phe	Leu	Leu	Leu	Ile	Tyr	Ser	Leu	Cys	Lys	His	Leu	Lys	Lys	
		195					200					205				
atg	cag	ctc	cat	ggc	aaa	gga	tct	caa	gat	ccc	agc	acc	aag	atc	cac	672
Met	Gln	Leu	His	Gly	Lys	Gly	Ser	Gln	Asp	Pro	Ser	Thr	Lys	Ile	His	
	210					215					220					
ata	aaa	gct	ctg	caa	act	gtg	acc	tcc	ttc	ctc	gta	tta	ctt	gcc	att	720
Ile	Lys	Ala	Leu	Gln	Thr	Val	Thr	Ser	Phe	Leu	Val	Leu	Leu	Ala	Ile	
225					230					235					240	
tac	ttt	ctg	tgt	cta	atc	ata	tcg	ttt	tgg	aat	tct	aag	atg	cta	cca	768
Tyr	Phe	Leu	Cys	Leu	Ile	Ile	Ser	Phe	Trp	Asn	Ser	Lys	Met	Leu	Pro	
				245					250					255		
aaa	gaa	att	gtc	tta	atg	ctt	tgc	caa	gct	ttt	gga	atc	ata	tat	cca	816
Lys	Glu	Ile	Val	Leu	Met	Leu	Cys	Gln	Ala	Phe	Gly	Ile	Ile	Tyr	Pro	
			260					265					270			
tca	ttc	cac	tca	ttc	att	ctg	att	tgg	ggg	aac	aag	acg	cta	aag	cag	864
Ser	Phe	His	Ser	Phe	Ile	Leu	Ile	Trp	Gly	Asn	Lys	Thr	Leu	Lys	Gln	
		275					280					285				
acc	ttt	ctt	tca	gtt	ttg	tgg	cag	gtg	act	tgc	tgg	gca	aaa	gga	cag	912
Thr	Phe	Leu	Ser	Val	Leu	Trp	Gln	Val	Thr	Cys	Trp	Ala	Lys	Gly	Gln	
	290					295					300					
aac	cag	tca	act	cca	tag											930
Asn	Gln	Ser	Thr	Pro												
305																

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Met Met Ser Phe Leu His Ile Val Phe Ser Ile Leu Val Val Val Ala  
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Phe Ile Leu Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Ile Asn Phe  
 20 25 30

Ile Ala Trp Val Lys Arg Gln Lys Ile Ser Ser Ala Asp Gln Ile Ile  
 35 40 45

Ala Ala Leu Ala Val Ser Lys Val Gly Leu Leu Trp Val Ile Leu Leu  
 50 55 60

His Trp Tyr Ser Thr Val Leu Asn Pro Thr Ser Ser Asn Leu Lys Val  
 65 70 75 80

Ile Ile Phe Ile Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Ile  
 85 90 95

Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Val Asn  
 100 105 110

Phe Ser Arg Leu Ile Phe His His Leu Lys Arg Lys Ala Lys Ser Val  
 115 120 125

Val Leu Val Ile Val Leu Gly Ser Leu Phe Phe Leu Val Cys Gln Leu  
 130 135 140

Val Met Lys Asn Thr Tyr Ile Asn Val Trp Thr Glu Glu Cys Glu Gly  
 145 150 155 160

Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Met His Leu Ser Asn  
 165 170 175

Leu Thr Val Ala Met Leu Ala Asn Leu Ile Pro Phe Thr Leu Thr Leu  
 180 185 190

Ile Ser Phe Leu Leu Leu Ile Tyr Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Ile His  
 210 215 220

Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Val Leu Leu Ala Ile  
 225 230 235 240

Tyr Phe Leu Cys Leu Ile Ile Ser Phe Trp Asn Ser Lys Met Leu Pro  
 245 250 255

Lys Glu Ile Val Leu Met Leu Cys Gln Ala Phe Gly Ile Ile Tyr Pro

260

265

270

Ser Phe His Ser Phe Ile Leu Ile Trp Gly Asn Lys Thr Leu Lys Gln  
275 280 285

Thr Phe Leu Ser Val Leu Trp Gln Val Thr Cys Trp Ala Lys Gly Gln  
290 295 300

Asn Gln Ser Thr Pro  
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ttt att ctt gga aat ttt gcc aat ggc ttt ata gca ctg ata aat ttc	96
Phe Ile Leu Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Ile Asn Phe	
20 25 30	
att gcc tgg gtc aag aga caa aag atc tcc tca gct gat caa att att	144
Ile Ala Trp Val Lys Arg Gln Lys Ile Ser Ser Ala Asp Gln Ile Ile	
35 40 45	
gct gct ctg gca gtc tcc aaa gtt ggt ttg ctc tgg gta ata tta tta	192
Ala Ala Leu Ala Val Ser Lys Val Gly Leu Leu Trp Val Ile Leu Leu	
50 55 60	
cat tgg tat tca act gtg ttg aat cca act tca tct aat tta aaa gta	240
His Trp Tyr Ser Thr Val Leu Asn Pro Thr Ser Ser Asn Leu Lys Val	
65 70 75 80	
ata att ttt att tct aat gcc tgg gca gta acc aat cat ttc agc atc	288
Ile Ile Phe Ile Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Ile	
85 90 95	
tgg ctt gct act agc ctc agc ata ttt tat ttg ctc aag atc gtc aat	336
Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Val Asn	
100 105 110	
ttc tcc aga ctt att ttt cat cac tta aaa agg aag gct aag agt gta	384
Phe Ser Arg Leu Ile Phe His His Leu Lys Arg Lys Ala Lys Ser Val	
115 120 125	
gtt ctg gtg ata gtg ttg ggg tct ttg ttc ttt ttg att tgt caa ctt	432
Val Leu Val Ile Val Leu Gly Ser Leu Phe Phe Leu Ile Cys Gln Leu	
130 135 140	
gtg atg aaa aac acg tat ata aat gtg tgg aca gaa gaa tgt gaa gga	480
Val Met Lys Asn Thr Tyr Ile Asn Val Trp Thr Glu Glu Cys Glu Gly	
145 150 155 160	
aac gta act tgg aag atc aaa ctg agg aat gca atg cac ctt tcc aac	528
Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Met His Leu Ser Asn	
165 170 175	
ttg act gta gcc atg cta gca aac ttg ata cca ttc act ctg acc ctg	576
Leu Thr Val Ala Met Leu Ala Asn Leu Ile Pro Phe Thr Leu Thr Leu	
180 185 190	
ata tct ttt ctg ctg tta atc tac tct ctg tgt aaa cat ctg aag aag	624
Ile Ser Phe Leu Leu Leu Ile Tyr Ser Leu Cys Lys His Leu Lys Lys	
195 200 205	

atg cag ctc cat ggc aaa gga tct caa gat ccc agc acc aag atc cac 672  
 Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Ile His  
 210 215 220  
 ata aaa gct ctg caa act gtg acc tcc ttc ctc gta tta ctt gcc att 720  
 Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Val Leu Leu Ala Ile  
 225 230 235 240  
 tac ttt ctg tgt cta atc ata tgc ttt tgg aat tct aag atg cta cca 768  
 Tyr Phe Leu Cys Leu Ile Ile Ser Phe Trp Asn Ser Lys Met Leu Pro  
 245 250 255  
 aaa gaa att gtc tta atg ctt tgc caa gct ttt gga atc ata tat cca 816  
 Lys Glu Ile Val Leu Met Leu Cys Gln Ala Phe Gly Ile Ile Tyr Pro  
 260 265 270  
 tca ttc cac tca ttc att ctg att tgg ggg aac aag acg cta aag cag 864  
 Ser Phe His Ser Phe Ile Leu Ile Trp Gly Asn Lys Thr Leu Lys Gln  
 275 280 285  
 acc ttt ctt tca gtt ttg tgg cag gtg act tgc tgg gca aaa gga cag 912  
 Thr Phe Leu Ser Val Leu Trp Gln Val Thr Cys Trp Ala Lys Gly Gln  
 290 295 300  
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 Asn Gln Ser Thr Pro  
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 20 25 30  
 Ile Ala Trp Val Lys Arg Gln Lys Ile Ser Ser Ala Asp Gln Ile Ile  
 35 40 45  
 Ala Ala Leu Ala Val Ser Lys Val Gly Leu Leu Trp Val Ile Leu Leu  
 50 55 60  
 His Trp Tyr Ser Thr Val Leu Asn Pro Thr Ser Ser Asn Leu Lys Val  
 65 70 75 80  
 Ile Ile Phe Ile Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Ile  
 85 90 95

Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Val Asn  
 100 105 110

Phe Ser Arg Leu Ile Phe His His Leu Lys Arg Lys Ala Lys Ser Val  
 115 120 125

Val Leu Val Ile Val Leu Gly Ser Leu Phe Phe Leu Ile Cys Gln Leu  
 130 135 140

Val Met Lys Asn Thr Tyr Ile Asn Val Trp Thr Glu Glu Cys Glu Gly  
 145 150 155 160

Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Met His Leu Ser Asn  
 165 170 175

Leu Thr Val Ala Met Leu Ala Asn Leu Ile Pro Phe Thr Leu Thr Leu  
 180 185 190

Ile Ser Phe Leu Leu Leu Ile Tyr Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Ile His  
 210 215 220

Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Val Leu Leu Ala Ile  
 225 230 235 240

Tyr Phe Leu Cys Leu Ile Ile Ser Phe Trp Asn Ser Lys Met Leu Pro  
 245 250 255

Lys Glu Ile Val Leu Met Leu Cys Gln Ala Phe Gly Ile Ile Tyr Pro  
 260 265 270

Ser Phe His Ser Phe Ile Leu Ile Trp Gly Asn Lys Thr Leu Lys Gln  
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Thr Phe Leu Ser Val Leu Trp Gln Val Thr Cys Trp Ala Lys Gly Gln  
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Asn Gln Ser Thr Pro  
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 1 5 10 15  
 ttt att ctt gga aat ttt gcc aat ggc ttt ata gca ctg ata aat ttc 96  
 Phe Ile Leu Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Ile Asn Phe  
 20 25 30  
 att gcc tgg gtc aag aga caa aag atc tcc tca gct gat caa att att 144  
 Ile Ala Trp Val Lys Arg Gln Lys Ile Ser Ser Ala Asp Gln Ile Ile

35	40	45	
gct gct ctg gca gtc tcc aaa gtt ggt ttg ctc tgg gta ata tta tta Ala Ala Leu Ala Val Ser Lys Val Gly Leu Leu Trp Val Ile Leu Leu 50 55 60			192
cat tgg tat tca act gtg ttg aat cca act tca tct aat tta gaa gta His Trp Tyr Ser Thr Val Leu Asn Pro Thr Ser Ser Asn Leu Glu Val 65 70 75 80			240
ata att ttt att tct aat gcc tgg gca gta acc aat cat ttc agc atc Ile Ile Phe Ile Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Ile 85 90 95			288
tgg ctt gct act agc ctc agc ata ttt tat ttg ctc aag atc gtc aat Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Val Asn 100 105 110			336
ttc tcc aga ctt att ttt cat cac tta aaa agg aag gct aag agt gta Phe Ser Arg Leu Ile Phe His His Leu Lys Arg Lys Ala Lys Ser Val 115 120 125			384
gtt ctg gtg ata gtg ttg ggg tct ttg ttc ttt ttg gtt tgt cac ctt Val Leu Val Ile Val Leu Gly Ser Leu Phe Phe Leu Val Cys His Leu 130 135 140			432
gtg atg aaa cac acg tat ata aat gtg tgg aca gaa gaa tgt gaa gga Val Met Lys His Thr Tyr Ile Asn Val Trp Thr Glu Glu Cys Glu Gly 145 150 155 160			480
aac gta act tgg aag atc aaa ctg agg aat gca atg cac ctt tcc aac Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Met His Leu Ser Asn 165 170 175			528
ttg act gta gcc atg cta gca aac ttg ata cca ttc act ctg acc ctg Leu Thr Val Ala Met Leu Ala Asn Leu Ile Pro Phe Thr Leu Thr Leu 180 185 190			576
ata tct ttt ctg ctg tta atc tac tct ctg tgt aaa cat ctg aag aag Ile Ser Phe Leu Leu Leu Ile Tyr Ser Leu Cys Lys His Leu Lys Lys 195 200 205			624
atg cag ctc cat ggc aaa gga tct caa gat ccc agc acc aag atc cac Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Ile His 210 215 220			672
ata aaa gct ctg caa act gtg acc tcc ttc ctc ata tta ctt gcc att Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Ile Leu Leu Ala Ile 225 230 235 240			720
tac ttt ctg tgt cta atc ata tcg ttt tgg aat ttt aag atg cga cca Tyr Phe Leu Cys Leu Ile Ile Ser Phe Trp Asn Phe Lys Met Arg Pro 245 250 255			768
aaa gaa att gtc tta atg ctt tgc caa gct ttt gga atc ata tat cca Lys Glu Ile Val Leu Met Leu Cys Gln Ala Phe Gly Ile Ile Tyr Pro 260 265 270			816
tca ttc cac tca ttc att ctg att tgg ggg aac aag acg cta aag cag Ser Phe His Ser Phe Ile Leu Ile Trp Gly Asn Lys Thr Leu Lys Gln 275 280 285			864

acc ttt ctt tca gtt ttg tgg cag gtg act tgc tgg gca aaa gga cag 912  
 Thr Phe Leu Ser Val Leu Trp Gln Val Thr Cys Trp Ala Lys Gly Gln  
 290 295 300

aac cag tca act cca tag  
 Asn Gln Ser Thr Pro 930  
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Met Met Ser Phe Leu His Ile Val Phe Ser Ile Leu Val Val Val Ala  
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Phe Ile Leu Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Ile Asn Phe  
 20 25 30

Ile Ala Trp Val Lys Arg Gln Lys Ile Ser Ser Ala Asp Gln Ile Ile  
 35 40 45

Ala Ala Leu Ala Val Ser Lys Val Gly Leu Leu Trp Val Ile Leu Leu  
 50 55 60

His Trp Tyr Ser Thr Val Leu Asn Pro Thr Ser Ser Asn Leu Glu Val  
 65 70 75 80

Ile Ile Phe Ile Ser Asn Ala Trp Ala Val Thr Asn His Phe Ser Ile  
 85 90 95

Trp Leu Ala Thr Ser Leu Ser Ile Phe Tyr Leu Leu Lys Ile Val Asn  
 100 105 110

Phe Ser Arg Leu Ile Phe His His Leu Lys Arg Lys Ala Lys Ser Val  
 115 120 125

Val Leu Val Ile Val Leu Gly Ser Leu Phe Phe Leu Val Cys His Leu  
 130 135 140

Val Met Lys His Thr Tyr Ile Asn Val Trp Thr Glu Glu Cys Glu Gly  
 145 150 155 160

Asn Val Thr Trp Lys Ile Lys Leu Arg Asn Ala Met His Leu Ser Asn  
 165 170 175



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Leu Thr Val Ala Met Leu Ala Asn Leu Ile Pro Phe Thr Leu Thr Leu  
180 185 190

Ile Ser Phe Leu Leu Leu Ile Tyr Ser Leu Cys Lys His Leu Lys Lys  
195 200 205

Met Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Ile His  
210 215 220

Ile Lys Ala Leu Gln Thr Val Thr Ser Phe Leu Ile Leu Leu Ala Ile  
225 230 235 240

Tyr Phe Leu Cys Leu Ile Ile Ser Phe Trp Asn Phe Lys Met Arg Pro  
245 250 255

Lys Glu Ile Val Leu Met Leu Cys Gln Ala Phe Gly Ile Ile Tyr Pro  
260 265 270

Ser Phe His Ser Phe Ile Leu Ile Trp Gly Asn Lys Thr Leu Lys Gln  
275 280 285

Thr Phe Leu Ser Val Leu Trp Gln Val Thr Cys Trp Ala Lys Gly Gln  
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Asn Gln Ser Thr Pro  
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1 5 10 15	
ttt gtt ctc gga aac ttt gcc aat ggc ttc ata gca ctg gta aat ttc	96
Phe Val Leu Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Phe	
20 25 30	
att gac tgg gtg aag aga aaa aag atc tcc tca gct gac caa att ctc	144
Ile Asp Trp Val Lys Arg Lys Lys Ile Ser Ser Ala Asp Gln Ile Leu	
35 40 45	
act gct ctg gcg gtc tcc aga att ggt ttg ctc tgg gca tta tta tta	192
Thr Ala Leu Ala Val Ser Arg Ile Gly Leu Leu Trp Ala Leu Leu Leu	
50 55 60	
aat tgg tat tta act gtg ttg aat cca gct ttt tat agt gta gaa tta	240
Asn Trp Tyr Leu Thr Val Leu Asn Pro Ala Phe Tyr Ser Val Glu Leu	
65 70 75 80	
aga att act tct tat aat gcc tgg gtt gta acc aac cat ttc agc atg	288
Arg Ile Thr Ser Tyr Asn Ala Trp Val Val Thr Asn His Phe Ser Met	
85 90 95	
tgg ctt gct gct aac ctc agc ata ttt tat ttg ctc aag att gcc aat	336
Trp Leu Ala Ala Asn Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn	
100 105 110	
ttc tcc aac ctt ctt ttt ctt cat tta aag agg aga gtt agg agt gtc	384
Phe Ser Asn Leu Leu Phe Leu His Leu Lys Arg Arg Val Arg Ser Val	
115 120 125	
att ctg gtg ata ctg ttg ggg act ttg ata ttt ttg gtt tgt cat ctt	432
Ile Leu Val Ile Leu Leu Gly Thr Leu Ile Phe Leu Val Cys His Leu	
130 135 140	
ctt gtg gca aac atg gat gag agt atg tgg gca gaa gaa tat gaa gga	480
Leu Val Ala Asn Met Asp Glu Ser Met Trp Ala Glu Glu Tyr Glu Gly	
145 150 155 160	
aac atg act ggg aag atg aaa ttg agg aat aca gta cat ctt tca tat	528
Asn Met Thr Gly Lys Met Lys Leu Arg Asn Thr Val His Leu Ser Tyr	
165 170 175	
ttg act gta act acc cta tgg agc ttc ata ccc ttt act ctg tcc ctg	576
Leu Thr Val Thr Thr Leu Trp Ser Phe Ile Pro Phe Thr Leu Ser Leu	
180 185 190	
ata tct ttt ctg atg cta atc tgt tct ctg tgt aaa cat ctc aag aag	624
Ile Ser Phe Leu Met Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys	
195 200 205	
atg cag ctc cat gga gaa gga tcg caa gat ctc agc acc aag gtc cac	672
Met Gln Leu His Gly Glu Gly Ser Gln Asp Leu Ser Thr Lys Val His	
210 215 220	
ata aaa gct ttg caa act ctg atc tcc ttc ctc ttg tta tgt gcc att	720
Ile Lys Ala Leu Gln Thr Leu Ile Ser Phe Leu Leu Leu Cys Ala Ile	
225 230 235 240	

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ttc ttt cta ttc cta atc gtt tcg gtt tgg agt cct agg agg ctg cgg 768  
 Phe Phe Leu Phe Leu Ile Val Ser Val Trp Ser Pro Arg Arg Leu Arg  
 245 250 255

aat gac cca gtt gtc atg gtt agc aag gct gtt gga aac ata tat ctt 816  
 Asn Asp Pro Val Val Met Val Ser Lys Ala Val Gly Asn Ile Tyr Leu  
 260 265 270

gca ttc gac tca ttc atc cta att tgg aga acc aag aag cta aaa cac 864  
 Ala Phe Asp Ser Phe Ile Leu Ile Trp Arg Thr Lys Lys Leu Lys His  
 275 280 285

acc ttt ctt ttg att ttg tgt cag att agg tgc tga 900  
 Thr Phe Leu Leu Ile Leu Cys Gln Ile Arg Cys  
 290 295

<210> 254  
 <211> 299  
 <212> PRT  
 <213> homo sapiens

<400> 254

Met Ile Thr Phe Leu Tyr Ile Phe Phe Ser Ile Leu Ile Met Val Leu  
 1 5 10 15

Phe Val Leu Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Phe  
 20 25 30

Ile Asp Trp Val Lys Arg Lys Lys Ile Ser Ser Ala Asp Gln Ile Leu  
 35 40 45

Thr Ala Leu Ala Val Ser Arg Ile Gly Leu Leu Trp Ala Leu Leu Leu  
 50 55 60

Asn Trp Tyr Leu Thr Val Leu Asn Pro Ala Phe Tyr Ser Val Glu Leu  
 65 70 75 80

Arg Ile Thr Ser Tyr Asn Ala Trp Val Val Thr Asn His Phe Ser Met  
 85 90 95

Trp Leu Ala Ala Asn Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn  
 100 105 110

Phe Ser Asn Leu Leu Phe Leu His Leu Lys Arg Arg Val Arg Ser Val  
 115 120 125

Ile Leu Val Ile Leu Leu Gly Thr Leu Ile Phe Leu Val Cys His Leu  
 130 135 140

Leu Val Ala Asn Met Asp Glu Ser Met Trp Ala Glu Glu Tyr Glu Gly

145

150

155

160

Asn Met Thr Gly Lys Met Lys Leu Arg Asn Thr Val His Leu Ser Tyr  
 165 170 175

Leu Thr Val Thr Thr Leu Trp Ser Phe Ile Pro Phe Thr Leu Ser Leu  
 180 185 190

Ile Ser Phe Leu Met Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
 195 200 205

Met Gln Leu His Gly Glu Gly Ser Gln Asp Leu Ser Thr Lys Val His  
 210 215 220

Ile Lys Ala Leu Gln Thr Leu Ile Ser Phe Leu Leu Leu Cys Ala Ile  
 225 230 235 240

Phe Phe Leu Phe Leu Ile Val Ser Val Trp Ser Pro Arg Arg Leu Arg  
 245 250 255

Asn Asp Pro Val Val Met Val Ser Lys Ala Val Gly Asn Ile Tyr Leu  
 260 265 270

Ala Phe Asp Ser Phe Ile Leu Ile Trp Arg Thr Lys Lys Leu Lys His  
 275 280 285

Thr Phe Leu Leu Ile Leu Cys Gln Ile Arg Cys  
 290 295

<210> 255  
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&lt;222&gt; (608) .. (608)

&lt;223&gt; SNP

&lt;400&gt; 255

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Met Ile Thr Phe Leu Tyr Ile Phe Phe Ser Ile Leu Ile Met Val Leu	
1 5 10 15	
ttt gtt ctc gga aac ttt gcc aat ggc ttc ata gca ctg gta aat ttc	96
Phe Val Leu Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Phe	
20 25 30	
att gac tgg gtg aag aga aaa aag atc tcc tca gct gac caa att ctc	144
Ile Asp Trp Val Lys Arg Lys Lys Ile Ser Ser Ala Asp Gln Ile Leu	
35 40 45	
act gct ctg gcg gtc tcc aga att ggt ttg ctc tgg gca tta tta tta	192
Thr Ala Leu Ala Val Ser Arg Ile Gly Leu Leu Trp Ala Leu Leu Leu	
50 55 60	
aat tgg tat tta act gtg ttg aat cca gct ttt tat agt gta gaa tta	240
Asn Trp Tyr Leu Thr Val Leu Asn Pro Ala Phe Tyr Ser Val Glu Leu	
65 70 75 80	
aga att act tct tat aat gcc tgg gtt gta acc aac cat ttc agc atg	288
Arg Ile Thr Ser Tyr Asn Ala Trp Val Val Thr Asn His Phe Ser Met	
85 90 95	
tgg ctt gct gct aac ctc agc ata ttt tat ttg ctc aag att gcc aat	336
Trp Leu Ala Ala Asn Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn	
100 105 110	
ttc tcc aac ctt ctt ttt ctt cat tta aag agg aga gtt agg agt gtc	384
Phe Ser Asn Leu Leu Phe Leu His Leu Lys Arg Arg Val Arg Ser Val	
115 120 125	
att ctg gtg ata ctg ttg ggg act ttg ata ttt ttg gtt tgt cat ctt	432
Ile Leu Val Ile Leu Leu Thr Leu Ile Phe Leu Val Cys His Leu	
130 135 140	
ctt gtg gca aac atg gat gag agt atg tgg gca gaa gaa tat gaa gga	480
Leu Val Ala Asn Met Asp Glu Ser Met Trp Ala Glu Glu Tyr Glu Gly	
145 150 155 160	
aac atg act ggg aag atg aaa ttg agg aat aca gta cat ctt tca tat	528
Asn Met Thr Gly Lys Met Lys Leu Arg Asn Thr Val His Leu Ser Tyr	
165 170 175	
ttg act gta act acc cta tgg agc ttc ata ccc ttt act ctg tcc ctg	576
Leu Thr Val Thr Thr Leu Trp Ser Phe Ile Pro Phe Thr Leu Ser Leu	
180 185 190	
ata tct ttt ctg atg cta atc tgt tct ctg tat aaa cat ctc aag aag	624
Ile Ser Phe Leu Met Leu Ile Cys Ser Leu Tyr Lys His Leu Lys Lys	
195 200 205	
atg cag ctc cat gga gaa gga tcg caa gat ctc agc acc aag gtc cac	672
Met Gln Leu His Gly Glu Gly Ser Gln Asp Leu Ser Thr Lys Val His	
210 215 220	
ata aaa gct ttg caa act ctg atc tcc ttc ctc ttg tta tgt gcc att	720

Ile 225	Lys	Ala	Leu	Gln	Thr 230	Leu	Ile	Ser	Phe	Leu 235	Leu	Leu	Cys	Ala	Ile 240	
ttc	ttt	cta	ttc	cta	atc	gtt	tcg	gtt	tgg	agt	cct	agg	agg	ctg	cgg	768
Phe	Phe	Leu	Phe	Leu	Ile	Val	Ser	Val	Trp 250	Ser	Pro	Arg	Arg	Leu	Arg 255	
aat	gac	cca	gtt	gtc	atg	gtt	agc	aag	gct	gtt	gga	aac	ata	tat	ctt	816
Asn	Asp	Pro	Val	Val	Met	Val	Ser	Lys 265	Ala	Val	Gly	Asn	Ile	Tyr	Leu 270	
gca	ttc	gac	tca	ttc	atc	cta	att	tgg	aga	acc	aag	aag	cta	aaa	cac	864
Ala	Phe	Asp	Ser	Phe	Ile	Leu	Ile	Trp 280	Arg	Thr	Lys	Lys 285	Leu	Lys	His	
acc	ttt	ctt	ttg	att	ttg	tgt	cag	att	agg	tgc	tga					900
Thr	Phe	Leu	Leu	Ile	Leu	Cys	Gln	Ile	Arg	Cys						
290						295										

&lt;210&gt; 256

&lt;211&gt; 299

&lt;212&gt; PRT

&lt;213&gt; homo sapiens

&lt;400&gt; 256

Met 1	Ile	Thr	Phe	Leu 5	Tyr	Ile	Phe	Phe	Ser 10	Ile	Leu	Ile	Met	Val 15	Leu
Phe	Val	Leu	Gly 20	Asn	Phe	Ala	Asn	Gly 25	Phe	Ile	Ala	Leu	Val 30	Asn	Phe
Ile	Asp	Trp 35	Val	Lys	Arg	Lys	Lys 40	Ile	Ser	Ser	Ala	Asp 45	Gln	Ile	Leu
Thr 50	Ala	Leu	Ala	Val	Ser	Arg 55	Ile	Gly	Leu	Leu	Trp 60	Ala	Leu	Leu	Leu
Asn 65	Trp	Tyr	Leu	Thr 70	Val	Leu	Asn	Pro	Ala	Phe 75	Tyr	Ser	Val	Glu	Leu 80
Arg	Ile	Thr	Ser	Tyr 85	Asn	Ala	Trp	Val	Val 90	Thr	Asn	His	Phe	Ser 95	Met
Trp	Leu	Ala	Ala	Asn 100	Leu	Ser	Ile	Phe 105	Tyr	Leu	Leu	Lys	Ile 110	Ala	Asn
Phe	Ser	Asn 115	Leu	Leu	Phe	Leu	His 120	Leu	Lys	Arg	Arg	Val 125	Arg	Ser	Val
Ile 130	Leu	Val	Ile	Leu	Leu	Gly 135	Thr	Leu	Ile	Phe	Leu	Val 140	Cys	His	Leu

Leu Val Ala Asn Met Asp Glu Ser Met Trp Ala Glu Glu Tyr Glu Gly  
 145 150 155 160

Asn Met Thr Gly Lys Met Lys Leu Arg Asn Thr Val His Leu Ser Tyr  
 165 170 175

Leu Thr Val Thr Thr Leu Trp Ser Phe Ile Pro Phe Thr Leu Ser Leu  
 180 185 190

Ile Ser Phe Leu Met Leu Ile Cys Ser Leu Tyr Lys His Leu Lys Lys  
 195 200 205

Met Gln Leu His Gly Glu Gly Ser Gln Asp Leu Ser Thr Lys Val His  
 210 215 220

Ile Lys Ala Leu Gln Thr Leu Ile Ser Phe Leu Leu Leu Cys Ala Ile  
 225 230 235 240

Phe Phe Leu Phe Leu Ile Val Ser Val Trp Ser Pro Arg Arg Leu Arg  
 245 250 255

Asn Asp Pro Val Val Met Val Ser Lys Ala Val Gly Asn Ile Tyr Leu  
 260 265 270

Ala Phe Asp Ser Phe Ile Leu Ile Trp Arg Thr Lys Lys Leu Lys His  
 275 280 285

Thr Phe Leu Leu Ile Leu Cys Gln Ile Arg Cys  
 290 295

<210> 257  
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<220>  
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 <223> SNP

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&lt;221&gt; variation

&lt;222&gt; (608)..(608)

&lt;223&gt; SNP

&lt;400&gt; 257

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Met Ile Thr Phe Leu Tyr Ile Phe Phe Ser Ile Leu Ile Met Val Leu	
1 5 10 15	
ttt gtt ctc gga aac ttt gcc aat ggc ttc ata gca ctg gta aat ttc	96
Phe Val Leu Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Phe	
20 25 30	
att gac tgg gtg aag aga aaa aag atc tcc tca gct gac caa att ctc	144
Ile Asp Trp Val Lys Arg Lys Lys Ile Ser Ser Ala Asp Gln Ile Leu	
35 40 45	
act gct ctg gcg gtc tcc aga att ggt ttg ctc tgg tca tta tta tta	192
Thr Ala Leu Ala Val Ser Arg Ile Gly Leu Leu Trp Ser Leu Leu Leu	
50 55 60	
aat tgg tat tta act gtg ttg aat cca gct ttt tat agt gta gaa tta	240
Asn Trp Tyr Leu Thr Val Leu Asn Pro Ala Phe Tyr Ser Val Glu Leu	
65 70 75 80	
aga att act tct tat aat gcc tgg gtt gta acc aac cat ttc agc atg	288
Arg Ile Thr Ser Tyr Asn Ala Trp Val Val Thr Asn His Phe Ser Met	
85 90 95	
tgg ctt gct gct aac ctc agc ata ttt tat ttg ctc aag att gcc aat	336
Trp Leu Ala Ala Asn Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn	
100 105 110	
ttc tcc aac ctt ctt ttt ctt cat tta aag agg aga gtt agg agt gtc	384
Phe Ser Asn Leu Leu Phe Leu His Leu Lys Arg Arg Val Arg Ser Val	
115 120 125	
att ctg gtg ata ctg ttg ggg act ttg ata ttt ttg gtt tgt cat ctt	432
Ile Leu Val Ile Leu Leu Gly Thr Leu Ile Phe Leu Val Cys His Leu	
130 135 140	
ctt gtg gca aac atg gat gag agt atg tgg gca gaa gaa tat gaa gga	480
Leu Val Ala Asn Met Asp Glu Ser Met Trp Ala Glu Glu Tyr Glu Gly	
145 150 155 160	
aac atg act ggg aag atg aaa ttg agg aat aca gta cat ctt tca tat	528
Asn Met Thr Gly Lys Met Lys Leu Arg Asn Thr Val His Leu Ser Tyr	
165 170 175	
ttg act gta act acc cta tgg agc ttc ata ccc ttt act ctg tcc ctg	576
Leu Thr Val Thr Leu Trp Ser Phe Ile Pro Phe Thr Leu Ser Leu	
180 185 190	
ata tct ttt ctg atg cta atc tgt tct ctg tgt aaa cat ctc aag aag	624
Ile Ser Phe Leu Met Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys	
195 200 205	
atg cag ctc cat gga gaa gga tcg caa gat ctc agc acc aag gtc cac	672
Met Gln Leu His Gly Glu Gly Ser Gln Asp Leu Ser Thr Lys Val His	



210 215 220

ata aaa gct ttg caa act ctg atc tcc ttc ctc ttg tta tgt gcc att 720  
 Ile Lys Ala Leu Gln Thr Leu Ile Ser Phe Leu Leu Leu Cys Ala Ile  
 225 230 235 240

ttc ttt cta ttc cta atc gtt tcg gtt tgg agt cct agg agg ctg cgg 768  
 Phe Phe Leu Phe Leu Ile Val Ser Val Trp Ser Pro Arg Arg Leu Arg  
 245 250 255

aat gac cca gtt gtc atc gtt agc aag gct gtt gga aac ata tat ctt 816  
 Asn Asp Pro Val Val Met Val Ser Lys Ala Val Gly Asn Ile Tyr Leu  
 260 265 270

gca ttc gac tca ttc atc cta att tgg aga acc aag aag cta aaa cac 864  
 Ala Phe Asp Ser Phe Ile Leu Ile Trp Arg Thr Lys Lys Leu Lys His  
 275 280 285

acc ttt ctt ttg att ttg tgt cag att agg tgc tga 900  
 Thr Phe Leu Leu Ile Leu Cys Gln Ile Arg Cys  
 290 295

<210> 258  
 <211> 299  
 <212> PRT  
 <213> homo sapiens

<400> 258

Met Ile Thr Phe Leu Tyr Ile Phe Phe Ser Ile Leu Ile Met Val Leu  
 1 5 10 15

Phe Val Leu Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Phe  
 20 25 30

Ile Asp Trp Val Lys Arg Lys Lys Ile Ser Ser Ala Asp Gln Ile Leu  
 35 40 45

Thr Ala Leu Ala Val Ser Arg Ile Gly Leu Leu Trp Ser Leu Leu Leu  
 50 55 60

Asn Trp Tyr Leu Thr Val Leu Asn Pro Ala Phe Tyr Ser Val Glu Leu  
 65 70 75 80

Arg Ile Thr Ser Tyr Asn Ala Trp Val Val Thr Asn His Phe Ser Met  
 85 90 95

Trp Leu Ala Ala Asn Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn  
 100 105 110

Phe Ser Asn Leu Leu Phe Leu His Leu Lys Arg Arg Val Arg Ser Val  
 115 120 125

Ile Leu Val Ile Leu Leu Gly Thr Leu Ile Phe Leu Val Cys His Leu  
130 135 140

Leu Val Ala Asn Met Asp Glu Ser Met Trp Ala Glu Glu Tyr Glu Gly  
145 150 155 160

Asn Met Thr Gly Lys Met Lys Leu Arg Asn Thr Val His Leu Ser Tyr  
165 170 175

Leu Thr Val Thr Thr Leu Trp Ser Phe Ile Pro Phe Thr Leu Ser Leu  
180 185 190

Ile Ser Phe Leu Met Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys  
195 200 205

Met Gln Leu His Gly Glu Gly Ser Gln Asp Leu Ser Thr Lys Val His  
210 215 220

Ile Lys Ala Leu Gln Thr Leu Ile Ser Phe Leu Leu Leu Cys Ala Ile  
225 230 235 240

Phe Phe Leu Phe Leu Ile Val Ser Val Trp Ser Pro Arg Arg Leu Arg  
245 250 255

Asn Asp Pro Val Val Met Val Ser Lys Ala Val Gly Asn Ile Tyr Leu  
260 265 270

Ala Phe Asp Ser Phe Ile Leu Ile Trp Arg Thr Lys Lys Leu Lys His  
275 280 285

Thr Phe Leu Leu Ile Leu Cys Gln Ile Arg Cys  
290 295

<210> 259  
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<220>  
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 <223> SNP

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atg ata act ttt cta tac att ttt ttt tca att cta ata atg gtt tta	48
Met Ile Thr Phe Leu Tyr Ile Phe Phe Ser Ile Leu Ile Met Val Leu	
1 5 10 15	
ttt gtt ctc gga aac ttt gcc aat ggc ttc ata gca ctg gta aat ttc	96
Phe Val Leu Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Phe	
20 25 30	
att gac tgg gtg aag aga aaa aag atc tcc tca gct gac caa att ctc	144
Ile Asp Trp Val Lys Arg Lys Lys Ile Ser Ser Ala Asp Gln Ile Leu	
35 40 45	
act gct ctg gtg gtc tcc aga att ggt ttg ctc tgg gca tta tta tta	192
Thr Ala Leu Val Val Ser Arg Ile Gly Leu Leu Trp Ala Leu Leu Leu	
50 55 60	
aat tgg tat tta act gtg ttg aat cca gct ttt tat agt gta gaa tta	240
Asn Trp Tyr Leu Thr Val Leu Asn Pro Ala Phe Tyr Ser Val Glu Leu	
65 70 75 80	
aga att act tct tat aat gcc tgg gtt gta acc aac cat ttc agc atg	288
Arg Ile Thr Ser Tyr Asn Ala Trp Val Val Thr Asn His Phe Ser Met	
85 90 95	
tgg ctt gct gct aac ctc agc ata ttt tat ttg ctc aag att gcc aat	336
Trp Leu Ala Ala Asn Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn	
100 105 110	
ttc tcc aac ctt ctt ttt ctt cat tta aag agg aga gtt agg agt gtc	384
Phe Ser Asn Leu Leu Phe Leu His Leu Lys Arg Arg Val Arg Ser Val	
115 120 125	
att ctg gtg ata ctg ttg ggg act ttg ata ttt ttg gtt tgt cat ctt	432
Ile Leu Val Ile Leu Leu Gly Thr Leu Ile Phe Leu Val Cys His Leu	
130 135 140	
ctt gtg gca aac atg gat gag agt atg tgg gca gaa gaa tat gaa gga	480
Leu Val Ala Asn Met Asp Glu Ser Met Trp Ala Glu Glu Tyr Glu Gly	
145 150 155 160	
aac atg act ggg aag atg aaa ttg agg aat aca gta cat ctt tca tat	528
Asn Met Thr Gly Lys Met Lys Leu Arg Asn Thr Val His Leu Ser Tyr	
165 170 175	
ttg act gta act acc cta tgg agc ttc ata ccc ttt act ctg tcc ctg	576
Leu Thr Val Thr Thr Leu Trp Ser Phe Ile Pro Phe Thr Leu Ser Leu	
180 185 190	
ata tct ttt ctg atg cta atc tgt tct ctg tat aaa cat ctc aag aag	624
Ile Ser Phe Leu Met Leu Ile Cys Ser Leu Tyr Lys His Leu Lys Lys	
195 200 205	

atg cag ctc cat gga gaa gga tcg caa gat ctc agc acc aag gtc cac	672
Met Gln Leu His Gly Glu Gly Ser Gln Asp Leu Ser Thr Lys Val His	
210 215 220	
ata aaa gct ttg caa act ctg atc tcc ttc ctc ttg tta tgt gcc att	720
Ile Lys Ala Leu Gln Thr Leu Ile Ser Phe Leu Leu Leu Cys Ala Ile	
225 230 235 240	
ttc ttt cta ttc cta atc gtt tcg gtt tgg agt cct agg agg ctg cgg	768
Phe Phe Leu Phe Leu Ile Val Ser Val Trp Ser Pro Arg Arg Leu Arg	
245 250 255	
aat gac cca gtt gtc atg gtt agc aag gct gtt gga aac ata tat ctt	816
Asn Asp Pro Val Val Met Val Ser Lys Ala Val Gly Asn Ile Tyr Leu	
260 265 270	
gca ttc gac tca ttc atc cta att tgg aga acc aag aag cta aaa cac	864
Ala Phe Asp Ser Phe Ile Leu Ile Trp Arg Thr Lys Lys Leu Lys His	
275 280 285	
acc ttt ctt ttg att ttg tgt cag att agg tgc tga	900
Thr Phe Leu Leu Ile Leu Cys Gln Ile Arg Cys	
290 295	

<210> 260  
 <211> 299  
 <212> PRT  
 <213> homo sapiens

<400> 260

Met Ile Thr Phe Leu Tyr Ile Phe Phe Ser Ile Leu Ile Met Val Leu	
1 5 10 15	
Phe Val Leu Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Phe	
20 25 30	
Ile Asp Trp Val Lys Arg Lys Lys Ile Ser Ser Ala Asp Gln Ile Leu	
35 40 45	
Thr Ala Leu Val Val Ser Arg Ile Gly Leu Leu Trp Ala Leu Leu Leu	
50 55 60	
Asn Trp Tyr Leu Thr Val Leu Asn Pro Ala Phe Tyr Ser Val Glu Leu	
65 70 75 80	
Arg Ile Thr Ser Tyr Asn Ala Trp Val Val Thr Asn His Phe Ser Met	
85 90 95	
Trp Leu Ala Ala Asn Leu Ser Ile Phe Tyr Leu Leu Lys Ile Ala Asn	
100 105 110	

Phe Ser Asn Leu Leu Phe Leu His Leu Lys Arg Arg Val Arg Ser Val  
 115 120 125

Ile Leu Val Ile Leu Leu Gly Thr Leu Ile Phe Leu Val Cys His Leu  
 130 135 140

Leu Val Ala Asn Met Asp Glu Ser Met Trp Ala Glu Glu Tyr Glu Gly  
 145 150 155 160

Asn Met Thr Gly Lys Met Lys Leu Arg Asn Thr Val His Leu Ser Tyr  
 165 170 175

Leu Thr Val Thr Thr Leu Trp Ser Phe Ile Pro Phe Thr Leu Ser Leu  
 180 185 190

Ile Ser Phe Leu Met Leu Ile Cys Ser Leu Tyr Lys His Leu Lys Lys  
 195 200 205

Met Gln Leu His Gly Glu Gly Ser Gln Asp Leu Ser Thr Lys Val His  
 210 215 220

Ile Lys Ala Leu Gln Thr Leu Ile Ser Phe Leu Leu Leu Cys Ala Ile  
 225 230 235 240

Phe Phe Leu Phe Leu Ile Val Ser Val Trp Ser Pro Arg Arg Leu Arg  
 245 250 255

Asn Asp Pro Val Val Met Val Ser Lys Ala Val Gly Asn Ile Tyr Leu  
 260 265 270

Ala Phe Asp Ser Phe Ile Leu Ile Trp Arg Thr Lys Lys Leu Lys His  
 275 280 285

Thr Phe Leu Leu Ile Leu Cys Gln Ile Arg Cys  
 290 295

<210> 261  
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 <212> DNA  
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<220>  
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 <222> (1)..(957)

<220>  
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 <222> (595)..(595)

&lt;223&gt; SNP

&lt;400&gt; 261

atg aat gga gac cac atg gtt cta gga tct tgc gtg act gac aag aag	48
Met Asn Gly Asp His Met Val Leu Gly Ser Ser Val Thr Asp Lys Lys	
1 5 10 15	
gcc atc atc ttg gtt acc att tta ctc ctt tta cgc ctg gta gca ata	96
Ala Ile Ile Leu Val Thr Ile Leu Leu Leu Arg Leu Val Ala Ile	
20 25 30	
gca ggc aat ggc ttc atc act gct gct ctg ggc gtg gag tgg gtg cta	144
Ala Gly Asn Gly Phe Ile Thr Ala Ala Leu Gly Val Glu Trp Val Leu	
35 40 45	
cgg aga atg ttg ttg cct tgt gat aag tta ttg gtt agc cta ggg gcc	192
Arg Arg Met Leu Leu Pro Cys Asp Lys Leu Leu Val Ser Leu Gly Ala	
50 55 60	
tct cgc ttc tgt ctg cag tca gtg gta atg ggt aag acc att tat gtt	240
Ser Arg Phe Cys Leu Gln Ser Val Val Met Gly Lys Thr Ile Tyr Val	
65 70 75 80	
ttc ttg cat ccg atg gcc ttc cca tac aac cct gta ctg cag ttt cta	288
Phe Leu His Pro Met Ala Phe Pro Tyr Asn Pro Val Leu Gln Phe Leu	
85 90 95	
gct ttc cag tgg gac ttc ctg aat gct gcc acc tta tgg tcc tct acc	336
Ala Phe Gln Trp Asp Phe Leu Asn Ala Ala Thr Leu Trp Ser Ser Thr	
100 105 110	
tgg ctg agt gtc ttc tat tgt gtg aaa att gct acc ttc acc cac cct	384
Trp Leu Ser Val Phe Tyr Cys Val Lys Ile Ala Thr Phe Thr His Pro	
115 120 125	
gtc ttc ttc tgg cta aag cac aag ttg tct ggg tgg cta cca tgg atg	432
Val Phe Phe Trp Leu Lys His Lys Leu Ser Gly Trp Leu Pro Trp Met	
130 135 140	
ctc ttc agc tct gta ggg ctg tcc agc ttc acc acc att cta ttt ttc	480
Leu Phe Ser Ser Val Gly Leu Ser Ser Phe Thr Thr Ile Leu Phe Phe	
145 150 155 160	
ata ggc aac cac aga atg tat cag aac tat tta agg aac cat cta caa	528
Ile Gly Asn His Arg Met Tyr Gln Asn Tyr Leu Arg Asn His Leu Gln	
165 170 175	
cct tgg aat gtc act ggc gat agc ata cgg agc tac tgt gag aaa ttc	576
Pro Trp Asn Val Thr Gly Asp Ser Ile Arg Ser Tyr Cys Glu Lys Phe	
180 185 190	
tat ctg ttc cct cta aaa atg att act tgg aca atg ccc act gct gtc	624
Tyr Leu Phe Pro Leu Lys Met Ile Thr Trp Thr Met Pro Thr Ala Val	
195 200 205	
ttt ttc att tgc atg att ttg ctg atc aca tct ctg gga aga cac agg	672
Phe Phe Ile Cys Met Ile Leu Leu Ile Thr Ser Leu Gly Arg His Arg	
210 215 220	
aag aag gct ctg ctt aca acc tca gga ttc cga gag ccc agt gtg cag	720
Lys Lys Ala Leu Leu Thr Thr Ser Gly Phe Arg Glu Pro Ser Val Gln	

443/447

225	230	235	240	
gca cac ata aag gct ctg ctg gct ctc ctc tct ttt gcc atg ctc ttc				768
Ala His Ile Lys Ala Leu Leu Ala Leu Leu Ser Phe Ala Met Leu Phe	245	250	255	
atc tca tat ttc ctg tca ctg gtg ttc agt gct gca ggt att ttt cca				816
Ile Ser Tyr Phe Leu Ser Leu Val Phe Ser Ala Ala Gly Ile Phe Pro	260	265	270	
cct ctg gac ttt aaa ttc tgg gtg tgg gag tca gtg att tat ctg tgt				864
Pro Leu Asp Phe Lys Phe Trp Val Trp Glu Ser Val Ile Tyr Leu Cys	275	280	285	
gca gca gtt cac ccc atc att ctg ctc ttc agc aac tgc agg ctg aga				912
Ala Ala Val His Pro Ile Ile Leu Leu Phe Ser Asn Cys Arg Leu Arg	290	295	300	
gct gtg ctg aag agt cgt cgt tcc tca agg tgt ggg aca cct tga				957
Ala Val Leu Lys Ser Arg Arg Ser Ser Arg Cys Gly Thr Pro	305	310	315	

<210> 262  
 <211> 318  
 <212> PRT  
 <213> homo sapiens

<400> 262

Met Asn Gly Asp His Met Val Leu Gly Ser Ser Val Thr Asp Lys Lys	1	5	10	15
Ala Ile Ile Leu Val Thr Ile Leu Leu Leu Arg Leu Val Ala Ile	20	25	30	
Ala Gly Asn Gly Phe Ile Thr Ala Ala Leu Gly Val Glu Trp Val Leu	35	40	45	
Arg Arg Met Leu Leu Pro Cys Asp Lys Leu Leu Val Ser Leu Gly Ala	50	55	60	
Ser Arg Phe Cys Leu Gln Ser Val Val Met Gly Lys Thr Ile Tyr Val	65	70	75	80
Phe Leu His Pro Met Ala Phe Pro Tyr Asn Pro Val Leu Gln Phe Leu	85	90	95	
Ala Phe Gln Trp Asp Phe Leu Asn Ala Ala Thr Leu Trp Ser Ser Thr	100	105	110	
Trp Leu Ser Val Phe Tyr Cys Val Lys Ile Ala Thr Phe Thr His Pro	115	120	125	

Val Phe Phe Trp Leu Lys His Lys Leu Ser Gly Trp Leu Pro Trp Met  
 130 135 140

Leu Phe Ser Ser Val Gly Leu Ser Ser Phe Thr Thr Ile Leu Phe Phe  
 145 150 155 160

Ile Gly Asn His Arg Met Tyr Gln Asn Tyr Leu Arg Asn His Leu Gln  
 165 170 175

Pro Trp Asn Val Thr Gly Asp Ser Ile Arg Ser Tyr Cys Glu Lys Phe  
 180 185 190

Tyr Leu Phe Pro Leu Lys Met Ile Thr Trp Thr Met Pro Thr Ala Val  
 195 200 205

Phe Phe Ile Cys Met Ile Leu Leu Ile Thr Ser Leu Gly Arg His Arg  
 210 215 220

Lys Lys Ala Leu Leu Thr Thr Ser Gly Phe Arg Glu Pro Ser Val Gln  
 225 230 235 240

Ala His Ile Lys Ala Leu Leu Ala Leu Leu Ser Phe Ala Met Leu Phe  
 245 250 255

Ile Ser Tyr Phe Leu Ser Leu Val Phe Ser Ala Ala Gly Ile Phe Pro  
 260 265 270

Pro Leu Asp Phe Lys Phe Trp Val Trp Glu Ser Val Ile Tyr Leu Cys  
 275 280 285

Ala Ala Val His Pro Ile Ile Leu Leu Phe Ser Asn Cys Arg Leu Arg  
 290 295 300

Ala Val Leu Lys Ser Arg Arg Ser Ser Arg Cys Gly Thr Pro  
 305 310 315

<210> 263  
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<220>  
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 <221> variation



&lt;222&gt; (595)..(595)

&lt;223&gt; SNP

&lt;400&gt; 263

atg aat gga gac cac atg gtt cta gga tct tcg gtg act gac aag aag	48
Met Asn Gly Asp His Met Val Leu Gly Ser Ser Val Thr Asp Lys Lys	
1 5 10 15	
gcc atc atc ttg gtt acc att tta ctc ctt tta cgc ctg gta gca ata	96
Ala Ile Ile Leu Val Thr Ile Leu Leu Leu Arg Leu Val Ala Ile	
20 25 30	
gca ggc aat ggc ttc atc act gct gct ctg ggc gtg gag tgg gtg cta	144
Ala Gly Asn Gly Phe Ile Thr Ala Ala Leu Gly Val Glu Trp Val Leu	
35 40 45	
cgg aga atg ttg ttg cct tgt gat aag tta ttg gtt agc cta ggg gcc	192
Arg Arg Met Leu Leu Pro Cys Asp Lys Leu Leu Val Ser Leu Gly Ala	
50 55 60	
tct cgc ttc tgt ctg cag tca gtg gta atg ggt aag acc att tat gtt	240
Ser Arg Phe Cys Leu Gln Ser Val Val Met Gly Lys Thr Ile Tyr Val	
65 70 75 80	
ttc ttg cat ccg atg gcc ttc cca tac aac cct gta ctg cag ttt cta	288
Phe Leu His Pro Met Ala Phe Pro Tyr Asn Pro Val Leu Gln Phe Leu	
85 90 95	
gct ttc cag tgg gac ttc ctg aat gct gcc acc tta tgg tcc tct acc	336
Ala Phe Gln Trp Asp Phe Leu Asn Ala Ala Thr Leu Trp Ser Thr	
100 105 110	
tgg ctc agt gtc ttc tat tgt gtg aaa att gct acc ttc acc cac cct	384
Trp Leu Ser Val Phe Tyr Cys Val Lys Ile Ala Thr Phe Thr His Pro	
115 120 125	
gtc ttc ttc tgg cta aag cac aag ttg tct ggg tgg cta cca tgg atg	432
Val Phe Phe Trp Leu Lys His Lys Leu Ser Gly Trp Leu Pro Trp Met	
130 135 140	
ctc ttc agc tct gta ggg ctc tcc agc ttc acc acc att cta ttt ttc	480
Leu Phe Ser Ser Val Gly Leu Ser Ser Phe Thr Thr Ile Leu Phe Phe	
145 150 155 160	
ata ggc aac cac aga atg tat cag aac tat tta agg aac cat cta caa	528
Ile Gly Asn His Arg Met Tyr Gln Asn Tyr Leu Arg Asn His Leu Gln	
165 170 175	
cct tgg aat gtc act ggc gat agc ata cgg agc tac tgt gag aaa ttc	576
Pro Trp Asn Val Thr Gly Asp Ser Ile Arg Ser Tyr Cys Glu Lys Phe	
180 185 190	
tat ctc ttc cct cta aaa ttg att act tgg aca atg ccc act gct gtc	624
Tyr Leu Phe Pro Leu Lys Leu Ile Thr Trp Thr Met Pro Thr Ala Val	
195 200 205	
ttt ttc att tgc atg att ttg ctc atc aca tct ctg gga aga cac agg	672
Phe Phe Ile Cys Met Ile Leu Leu Ile Thr Ser Leu Gly Arg His Arg	
210 215 220	
aag aag gct ctc ctt aca acc tca gga ttc cga gag ccc agt gtg cag	720

446/447

Lys 225	Lys	Ala	Leu	Leu	Thr 230	Thr	Ser	Gly	Phe	Arg 235	Glu	Pro	Ser	Val	Gln 240	
gca	cac	ata	aag	gct	ctg	ctg	gct	ctc	ctc	tct	ttt	gcc	atg	ctc	ttc	768
Ala	His	Ile	Lys	Ala 245	Leu	Leu	Ala	Leu	Leu	Ser	Phe	Ala	Met	Leu	Phe 255	
atc	tca	tat	ttc	ctg	tca	ctg	gtg	ttc	agt	gct	gca	ggg	att	ttt	cca	816
Ile	Ser	Tyr	Phe 260	Leu	Ser	Leu	Val	Phe 265	Ser	Ala	Ala	Gly	Ile	Phe	Pro	
cct	ctg	gac	ttt	aaa	ttc	tg	gtg	tg	gag	tca	gtg	att	tat	ctg	tgt	864
Pro	Leu	Asp	Phe 275	Lys	Phe	Trp	Val	Trp 280	Glu	Ser	Val	Ile	Tyr	Leu	Cys	
gca	gca	gtt	cac	ccc	atc	att	ctg	ctc	ttc	agc	aac	tgc	agg	ctg	aga	912
Ala	Ala	Val	His	Pro	Ile	Ile 295	Leu	Leu	Phe	Ser	Asn 300	Cys	Arg	Leu	Arg	
gct	gtg	ctg	aag	agt	cgt	cgt	tcc	tca	agg	tgt	ggg	aca	cct	tga		957
Ala	Val	Leu	Lys	Ser	Arg 310	Arg	Ser	Ser	Arg	Cys 315	Gly	Thr	Pro			

<210> 264  
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 <213> homo sapiens

<400> 264

Met 1	Asn	Gly	Asp	His 5	Met	Val	Leu	Gly	Ser 10	Ser	Val	Thr	Asp	Lys 15	Lys
Ala	Ile	Ile	Leu	Val	Thr	Ile	Leu	Leu	Leu	Arg	Leu	Val	Ala	Ile	
			20					25					30		
Ala	Gly	Asn	Gly	Phe	Ile	Thr	Ala	Ala	Leu	Gly	Val	Glu	Trp	Val	Leu
		35					40					45			
Arg	Arg	Met	Leu	Leu	Pro	Cys	Asp	Lys	Leu	Leu	Val	Ser	Leu	Gly	Ala
		50				55					60				
Ser	Arg	Phe	Cys	Leu	Gln	Ser	Val	Val	Met	Gly	Lys	Thr	Ile	Tyr	Val
65					70					75					80
Phe	Leu	His	Pro	Met	Ala	Phe	Pro	Tyr	Asn	Pro	Val	Leu	Gln	Phe	Leu
				85					90					95	
Ala	Phe	Gln	Trp	Asp	Phe	Leu	Asn	Ala	Ala	Thr	Leu	Trp	Ser	Ser	Thr
			100					105						110	
Trp	Leu	Ser	Val	Phe	Tyr	Cys	Val	Lys	Ile	Ala	Thr	Phe	Thr	His	Pro
		115					120					125			

Val Phe Phe Trp Leu Lys His Lys Leu Ser Gly Trp Leu Pro Trp Met  
130 135 140

Leu Phe Ser Ser Val Gly Leu Ser Ser Phe Thr Thr Ile Leu Phe Phe  
145 150 155 160

Ile Gly Asn His Arg Met Tyr Gln Asn Tyr Leu Arg Asn His Leu Gln  
165 170 175

Pro Trp Asn Val Thr Gly Asp Ser Ile Arg Ser Tyr Cys Glu Lys Phe  
180 185 190

Tyr Leu Phe Pro Leu Lys Leu Ile Thr Trp Thr Met Pro Thr Ala Val  
195 200 205

Phe Phe Ile Cys Met Ile Leu Leu Ile Thr Ser Leu Gly Arg His Arg  
210 215 220

Lys Lys Ala Leu Leu Thr Thr Ser Gly Phe Arg Glu Pro Ser Val Gln  
225 230 235 240

Ala His Ile Lys Ala Leu Leu Ala Leu Leu Ser Phe Ala Met Leu Phe  
245 250 255

Ile Ser Tyr Phe Leu Ser Leu Val Phe Ser Ala Ala Gly Ile Phe Pro  
260 265 270

Pro Leu Asp Phe Lys Phe Trp Val Trp Glu Ser Val Ile Tyr Leu Cys  
275 280 285

Ala Ala Val His Pro Ile Ile Leu Leu Phe Ser Asn Cys Arg Leu Arg  
290 295 300

Ala Val Leu Lys Ser Arg Arg Ser Ser Arg Cys Gly Thr Pro  
305 310 315